COMMONWEALTH OF VIRGINIA

STANDARD CONTRACT

Contract Number: VTS-2375-2025

This contract entered into this 19th day of August 2024 by Industrial Floor Systems, Inc. dba Industrial Floor Systems, Inc. hereinafter called the "Contractor" and Commonwealth of Virginia, Virginia Polytechnic Institute and State University called "Virginia Tech."

WITNESSETH that the Contractor and Virginia Tech, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide Epoxy & Industrial Floor Systems to Virginia Tech as set forth in the Contract Documents.

PERIOD OF CONTRACT: From August 19, 2024 through August 18, 2025 with option for four (4) one-year renewals

COMPENSATION AND METHOD OF PAYMENT: The Contractor shall be paid by Virginia Tech in accordance with the Contract Documents.

CONTRACT DOCUMENTS: The Contract Documents shall consist of this signed contract, Request for Proposal (RFP) number 337312407 dated December 5, 2023, together with Addendum Number 1 To RFP dated December 20, 2023, the proposal submitted by the Contractor dated January 11, 2024 and the negotiation summary, all of which Contract Documents are incorporated herein.

ELECTRONIC TRANSACTIONS: If this paragraph is initialed by both parties, to the fullest extent permitted by Code of Virginia, Title 59.1, Chapter 42.1, the parties do hereby expressly authorize and consent to the use of electronic signatures as an additional method of signing and/or initialing this contract and agree electronic signatures (for example, the delivery of a PDF copy of the signature of either party via facsimile or electronic mail or signing electronically by utilizing an electronic signature service) are the same as manual executed handwritten signatures for the purposes of validity, enforceability and admissibility.

Initial
PM /
(Initials)

In WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

Contractor
By: Signed by: Pam Mohler 9F24C73D8DC548A...
(Signature)
Pam Mohler President
Name and Title

Virginia Tech
By: DocuSigned by: Reed Nagel 5EF51DA320D049B...

Reed Nagel
Director of Procurement

VIRGINIA TECH™

Request for Proposal #337312407

For

Epoxy & Industrial Flooring Systems

December 5, 2023

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, sexual orientation, gender identity, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

RFP # 337312407, Epoxy & Industrial Flooring Systems

INCLUDE THIS PAGE WITH YOUR PROPOSAL, SIGNATURE AT SUBMISSION IS REQUIRED

DUE DATE: Proposals will be received until January 5, 2023 at 3:00 PM. Failure to submit proposals to the correct location by the designated date and hour will result in disqualification.

INQUIRIES: All inquiries for information regarding this solicitation should be directed to Mary Seyler, Phone: (540) 231- 3813 e-mail: mseyler@vt.edu. All inquiries will be answered in the form of an addendum. Inquiries must be submitted by 3PM on December 15, 2023. Inquiries must be submitted to the procurement officer identified in this solicitation.

PROPOSAL SUBMISSION:

Please note, proposal submission procedures have changed effective March 2023.

Proposals may NOT be hand delivered to the Procurement Office.

Proposals should be submitted electronically through Virginia Tech's procurement portal. This portal allows you access to view business opportunities and submit bids and proposals to Virginia Tech digitally and securely.

Proposals must be submitted electronically at:
https://bids.sciquest.com/apps/Router/PublicEvent?CustomerOrg=VATech

Vendors will need to sign up through this procurement portal, hosted by Jaggaer. **It is encouraged for all vendors to register prior to the proposal submission deadline to avoid late submissions**. Registration is easy and free. If you have any challenges with the registration process, please contact Jaggaer Support at 1-800-233-1121 or procurement@vt.edu. It is recommended to use Chrome as your browser.

Click on the opportunity and log in to your vendor account to begin preparing your submission. Upon completion, you will receive a submission receipt email confirmation. Virginia Tech will not confirm receipt of proposals. It is the responsibility of the offeror to make sure their proposal is delivered on time.

Hard copy or email proposals will not be accepted. Late proposals will not be accepted, nor will additional time be granted to any individual Vendor.

Attachments must be smaller than 50MB in order to be received by the University.

In compliance with this Request For Proposal and to all the conditions imposed therein and hereby incorporated by reference, the undersigned offers and agrees to furnish the goods or services in accordance with the attached signed proposal and as mutually agreed upon by subsequent negotiation.

AUTHORIZED SIGNATURE: _____ Date: _____

[INCLUDE THIS PAGE]

I. PURPOSE:

This Request for Proposal (RFP) seeks to solicit proposals to establish a contract through competitive negotiations by Virginia Polytechnic Institute and State University (Virginia Tech), an agency of the Commonwealth of Virginia.

From time to time Virginia Tech departments require epoxy and other hard flooring systems for clean room, clinical, athletic and other hard surface applications. Although Virginia Tech currently doesn't have any immediate needs for these products and services, the intention of this RFP is to enter into a term contract or contracts to provide them on an ongoing, as needed basis.

II. SMALL, WOMAN-OWNED AND MINORITY (SWAM) BUSINESS PARTICIPATION:

The mission of the Virginia Tech supplier opportunity program is to foster inclusion in the university supply chain and accelerate economic growth in our local communities through the engagement and empowerment of high quality and cost competitive small, minority-owned, women-owned, and local suppliers. Virginia Tech encourages prime suppliers, contractors, and service providers to facilitate the participation of small businesses, and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other inclusive and innovative relationships.

For more information, please visit: https://www.sbsd.virginia.gov/

III. CONTRACT PERIOD:

The term of this contract is for 1 year year(s), or as negotiated. There will be an option for four (4) one year renewals, or as negotiated.

IV. EVA BUSINESS-TO-GOVERNMENT ELECTRONIC PROCUREMENT SYSTEM:

The eVA Internet electronic procurement solution streamlines and automates government purchasing activities within the Commonwealth of Virginia. Virginia Tech, and other state agencies and institutions, have been directed by the Governor to maximize the use of this system in the procurement of goods and services. *We are, therefore, requesting that your firm register as a vendor within the eVA system.*

There are transaction fees involved with the use of eVA. These fees must be considered in the provision of quotes, bids and price proposals offered to Virginia Tech. Failure to register within the eVA system may result in the quote, bid or proposal from your firm being rejected and the award made to another vendor who is registered in the eVA system.

Registration in the eVA system is accomplished on-line. Your firm must provide the necessary information. Please visit the eVA website portal at http://www.eva.virginia.gov/pages/eva-registration-buyer-vendor.htm and **register both with eVA and Ariba**. *This process needs to be completed before Virginia Tech can issue your firm a Purchase Order or contract.* If your firm conducts business from multiple geographic locations, please register these locations in your initial registration.

For registration and technical assistance, reference the eVA website at: https://eva.virginia.gov/, or call 866-289-7367 or 804-371-2525.

V. CONTRACT PARTICIPATION:

It is the intent of this solicitation and resulting contract to allow for cooperative procurement. Accordingly, any public body, public or private health or educational institutions, or Virginia Tech's affiliated corporations and/or partnerships may access any resulting contract if authorized by the contractor.

Participation in this cooperative procurement is strictly voluntary. If authorized by the Contractor, the resultant contract may be extended to the entities indicated above to purchase at contract prices in accordance with contract terms. The Contractor shall notify Virginia Tech in writing of any such entities accessing the contract, if requested. No modification of this contract or execution of a separate contract is required to participate. The Contractor will provide semi-annual usage reports for all entities accessing the Contract, as requested. Participating entities shall place their own orders directly with the Contractor and shall fully and independently administer their use of the contract to include contractual disputes, invoicing and payments without direct administration from Virginia Tech. Virginia Tech shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the contract. It is understood and agreed that Virginia Tech is not responsible for the acts or omissions of any entity, and will not be considered in default of the contract no matter the circumstances.

Use of this contract does not preclude any participating entity from using other contracts or competitive processes as the need may be.

VI. STATEMENT OF NEEDS/SCOPE OF WORK:

A. General: Providing, delivering and installing epoxy and other hard flooring systems in accordance project specific requirements as negotiated.

B. Materials: Contractor shall provide all materials, equipment, tools and peripheral products required to perform work in a safe, efficient and productive manner.

C. Labor: Personnel providing work shall be experienced in installing the type of flooring being offered in accordance with manufacturers' instructions and work in a professional, safe manner while keeping areas of work clean and free of debris. The contractor shall have the appropriate contractor's license required for the work being provided for any given project.

VII. PROPOSAL PREPARATION AND SUBMISSION:

A. Specific Requirements

Proposals should be as thorough and detailed as possible so that Virginia Tech may properly evaluate your capabilities to provide the required goods or services. Offerors are required to submit the following information/items as a complete proposal:

1. Quality of Products/Services offered and suitability for the Intended Purpose:
   Provide complete manufacturer material information for all the flooring options being offered. Provide complete information about services offered over and above standard installation. Product information for each flooring option should be identified by the corresponding item number on the price schedule (refer to attachment C Price Schedule and item 4 "Price" below)

2. Qualifications and experience of offeror in providing the goods and services:
   Provide a brief narrative about your company and its experience in providing the goods and services described herein. Include information about your installation personnel and there experience and any specific training they have in installing the flooring being offered. Provide examples of similar, past work done for other entities. Provide 3 references where you have done work of similar requirements. Provide VA Contractor's license number.

3. Specific plans or methodology t be used to provide the services:
   Provide examples of typical flooring installations your company provides and the general timelines needed to perform work. Provide information about how your company ensures the flooring type selected works for the clients needs.

4. Price:
   See Attachment C – "Price Schedule" which shall be completed by offeror. Per square foot unit prices shall include all costs associated with providing, delivering and standard installation of the flooring being offered. Pricing should be provided assuming a standard, square room configuration. The first six lines of the price schedule are for epoxy flooring in different SF increments, with and without wall base. If so desired, additional lines have been provided so offerors may provide pricing for other hard flooring options that the contractor provides. For these additional flooring options, please follow the same Item # system and square footage increments as indicated for the epoxy flooring. If there is wall base that is normally used in tandem with the additional flooring being offered, please provide pricing for the flooring with and without that wall base. Again, use the epoxy flooring pricing scenario as a guide. In addition, if your company provides these products and services across other "zones" in Virginia and wishes to provide service to other agencies across the state including VASCUPP schools, please provide a separate price schedule for those zones. See attachment B – Zone Map for locations of the VASCUPP schools. Note vendors are not required to provide pricing to other zones but MUST provide pricing for Zone 8 which includes Virginia Tech, Radford University and Virginia Military Institute.

5. Participation of Small, Women-owned and Minority-owned Business (SWAM) Business:

   If your business cannot be classified as SWaM, describe your plan for utilizing SWaM subcontractors if awarded a contract. Describe your ability to provide reporting on SWaM subcontracting spend when requested. If your firm or any business that you plan to subcontract with can be classified as SWaM, but has not been certified by the Virginia Department of Small Business and Supplier Diversity (SBSD), it is expected that the certification process will be initiated no later than the time of the award. If your firm is currently certified, you agree to maintain your certification for the life of the contract. For assistance with SWaM certification, visit the SBSD website at http://www.sbsd.virginia.gov/

6. The return of the Submission Instruction page and addenda, if any, signed and filled out as required.

D. General Requirements

1. RFP Response: In order to be considered for selection, Offerors shall submit a complete response to this RFP to include;

   a. **One (1) electronic document** in WORD format or searchable PDF of the entire proposal as one document, INCLUDING ALL ATTACHMENTS must be uploaded through the Virginia Tech online submission portal. Refer to page 2 for instructions.

      Any proprietary information should be clearly marked in accordance with 2.d. below.

   b. Should the proposal contain **proprietary information**, provide **one (1) redacted electronic copy** of the proposal and attachments **with proprietary portions removed or blacked out**. This redacted copy should follow the same upload procedures as described on Page 1 of this RFP. This redacted copy should be clearly marked *"Redacted Copy"* within the name of the document. The classification of an entire proposal document, line item prices and/or total proposal prices as proprietary or trade secrets is not acceptable. Virginia Tech shall not be responsible for the Contractor's failure to exclude proprietary information from this redacted copy.

      No other distribution of the proposals shall be made by the Offeror.

2. Proposal Preparation:

   a. Proposals shall be signed by an authorized representative of the Offeror. All information requested should be submitted. Failure to submit all information requested may result in Virginia Tech requiring prompt submission of missing information and/or giving a lowered evaluation of the proposal. Proposals which are substantially incomplete or lack key information may be rejected by Virginia Tech at its discretion. Mandatory requirements are those required by law or regulation or are such that they cannot be waived and are not subject to negotiation.

   b. Proposals should be prepared simply and economically providing a straightforward, concise description of capabilities to satisfy the requirements of the RFP. Emphasis should be on completeness and clarity of content.

   c. Proposals should be organized in the order in which the requirements are presented in the RFP. All pages of the proposal should be numbered. Each paragraph in the proposal should reference the paragraph number of the corresponding section of the RFP. It is also helpful to cite the paragraph number, subletter, and repeat the text of the requirement as it appears in the RFP. If a response covers more than one page, the paragraph number and subletter should be repeated at the top of the next page. The proposal should contain a table of contents which cross references the RFP requirements. Information which the offeror desires to present that does not fall within any of the requirements of the RFP should be inserted at an appropriate place or be attached at the end of the proposal and designated as additional material. Proposals that are not organized in this manner risk elimination from consideration if the evaluators are unable to find where the RFP requirements are specifically addressed.

d. Ownership of all data, material and documentation originated and prepared for Virginia Tech pursuant to the RFP shall belong exclusively to Virginia Tech and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act. However, to prevent disclosure the Offeror must invoke the protections of Section 2.2-4342F of the Code of Virginia, in writing, either before or at the time the data or other materials is submitted. The written request must specifically identify the data or other materials to be protected and state the reasons why protection is necessary. –The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices and/or total proposal prices as proprietary or trade secrets is not acceptable and may result in rejection of the proposal.

3. Oral Presentation: Offerors who submit a proposal in response to this RFP may be required to give an oral presentation of their proposal to Virginia Tech.—This will provide an opportunity for the Offeror to clarify or elaborate on the proposal but will in no way change the original proposal. Virginia Tech will schedule the time and location of these presentations. Oral presentations are an option of Virginia Tech and may not be conducted. Therefore, proposals should be complete.

VIII. SELECTION CRITERIA AND AWARD:

A. Selection Criteria

Proposals will be evaluated by Virginia Tech using the following:

Criteria	Maximum Point Value
1. Quality of products/services offered and suitability for the intended purposes	25
2. Qualifications and experiences of Offeror in providing the goods/services	25
3. Specific plans or methodology to be used to provide the Services	15
4. Cost (or Price)	25
5. Participation of Small, Women-Owned and Minority (SWAM) Business	10
Total	100

B. Award

Selection shall be made of two or more offerors deemed to be fully qualified and best suited among those submitting proposals on the basis of the evaluation factors included in the Request for Proposal, including price, if so stated in the Request for Proposal. Negotiations shall then be conducted with the offerors so selected. Price shall be considered, but need not be the sole determining factor. After negotiations have been conducted with each offeror so selected, Virginia Tech shall select the offeror which, in its opinion, has made the best proposal, and shall

award the contract to that offeror. Virginia Tech may cancel this Request for Proposal or reject proposals at any time prior to an award. Should Virginia Tech determine in writing and in its sole discretion that only one offeror has made the best proposal, a contract may be negotiated and awarded to that offeror. The award document will be a contract incorporating by reference all the requirements, terms and conditions of this solicitation and the Contractor's proposal as negotiated.

Virginia Tech reserves the right to award multiple contracts as a result of this solicitation.

IX. INVOICES:

Invoices for goods or services provided under any contract resulting from this solicitation shall be submitted by email to vtinvoices@vt.edu or by mail to:

Virginia Polytechnic Institute and State University (Virginia Tech)
Accounts Payable
North End Center, Suite 3300
300 Turner Street NW
Blacksburg, Virginia 24061

X. METHOD OF PAYMENT:

Virginia Tech will authorize payment to the contractor as negotiated in any resulting contract from the aforementioned Request for Proposal.

Payment can be expedited through the use of the Wells One AP Control Payment System. Virginia Tech strongly encourages participation in this program. For more information on this program please refer to Virginia Tech's Procurement website: http://www.procurement.vt.edu/vendor/wellsone.html or contact the procurement officer identified in the RFP.

XI. ADDENDUM:

Any **ADDENDUM** issued for this solicitation may be accessed at http://www.apps.vpfin.vt.edu/html.docs/bids.php. Since a paper copy of the addendum will not be mailed to you, we encourage you to check the web site regularly.

XII. COMMUNICATIONS:

Communications regarding this solicitation shall be formal from the date of issue, until either a Contractor has been selected or the Procurement Department rejects all proposals. Formal communications will be directed to the procurement officer listed on this solicitation. Informal communications, including but not limited to request for information, comments or speculations regarding this solicitation to any University employee other than a Procurement Department representative may result in the offending Offeror's proposal being rejected.

XIII. CONTROLLING VERSION OF SOLICITATION:

The posted version of the solicitation and any addenda issued by Virginia Tech Procurement Services is the mandatory controlling version of the document. Any modification of/or additions to the solicitation by the Offeror shall not modify the official version of the solicitation issued by Virginia Tech Procurement Services. Such modifications or additions to the solicitation by the Offeror may be cause for rejection of the proposal; however, Virginia Tech reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

XIV. TERMS AND CONDITIONS:

This solicitation and any resulting contract/purchase order shall be governed by the attached terms and conditions, see Attachment A.

XV. CONTRACT ADMINISTRATION:

A. The individual user departments at Virginia Tech shall be identified as the Contract Administrators and shall use all powers under the contract to enforce its faithful performance.

B. The Contract Administrators in each user departments shall determine the amount, quantity, acceptability, fitness of all aspects of the services and shall decide all other questions in connection with the services. Contract Administrators, or designees, shall not have authority to approve changes in the services which alter the concept or which call for an extension of time for this contract. Any modifications made must be authorized by the Virginia Tech Procurement Department through a written amendment to the contract.

C. Mary Seyler, Senior Buyer, Procurement, shall oversee the contract in its entirety and will serve as the point of contact for issues involving this contract.

XVI. ATTACHMENTS:

Attachment A - Terms and Conditions
Attachment B – Zone Map for Cooperative Contracts
Attachment C – Price Schedule

ATTACHMENT A

TERMS AND CONDITIONS

RFP GENERAL TERMS AND CONDITIONS

See:
https://www.procurement.vt.edu/content/dam/procurement_vt_edu/docs/terms/GTC_RFP_02182022.pdf

ADDITIONAL TERMS AND CONDITIONS

1. **ADDITIONAL GOODS AND SERVICES**: The University may acquire other goods or services that the supplier provides other than those specifically solicited. The University reserves the right, subject to mutual agreement, for the Contractor to provide additional goods and/or services under the same pricing, terms and conditions and to make modifications or enhancements to the existing goods and services. Such additional goods and services may include other products, components, accessories, subsystems, or related services newly introduced during the term of the Agreement.

2. **AUDIT**: The Contractor hereby agrees to retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. Virginia Tech, its authorized agents, and/or the State auditors shall have full access and the right to examine any of said materials during said period.

3. **AVAILABILITY OF FUNDS**: It is understood and agreed between the parties herein that Virginia Tech shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

4. **CANCELLATION OF CONTRACT**: Virginia Tech reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the Contractor. In the event the initial contract period is for more than 12 months, the resulting contract may be terminated by either party, without penalty, after the initial 12 months of the contract period upon 60 days written notice to the other party. Any contract cancellation notice shall not relieve the Contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.

5. **CONTRACT DOCUMENTS**: The contract entered into by the parties shall consist of the Request for Proposal including all modifications thereof, the proposal submitted by the Contractor, the written results of negotiations, the Commonwealth Standard Contract Form, all of which shall be referred to collectively as the Contract Documents.

6. **IDENTIFICATION OF PROPOSAL**: Virginia Tech will only be accepting electronic submission of proposals. All submissions must be submitted to the Virginia Tech online submission portal. Upon completion you will be directed to your Submission Receipt. Virginia Tech will not confirm receipt of proposals. It is the responsibility of the offeror to make sure their proposal is delivered on time. **Attachments must be smaller than 50MB in order to be received by the University.** Proposals may **NOT** be hand delivered to the Procurement Office.

7. **NOTICES**: Any notices to be given by either party to the other pursuant to any contract resulting from this solicitation shall be in writing via email.

8. **SEVERAL LIABILITY:** Virginia Tech will be severally liable to the extent of its purchases made against any contract resulting from this solicitation. Applicable entities described herein will be severally liable to the extent of their purchases made against any contract resulting from this solicitation.

9. **CLOUD OR WEB HOSTED SOFTWARE SOLUTIONS**: For agreements involving Cloud-based Web-hosted software/applications refer to link for additional terms and conditions: http://www.ita.vt.edu/purchasing/VT_Cloud_Data_Protection_Addendum_final03102017.pdf

10. **ADVERTISING**: In the event a contract is awarded for supplies, equipment, or services resulting from this solicitation, no indication of such sales or services to Virginia Tech will be used in product literature or advertising. The contractor shall not state in any of the advertising or product literature that the Commonwealth of Virginia or any agency or institution of the Commonwealth has purchased or uses its products or services.

11. **COMPLETE INFORMATION**: All offerors/Bidders shall state manufacturer and product offered, and enclose complete and detailed specifications with Proposal/Bid for all products offered. This is required even if quoting on the exact brand name as shown. Failure to do so may cause Proposal/Bid to be considered nonresponsive.

12. **CONTRACTOR/SUBCONTRACTOR LICENSE REQUIREMENT**: By my signature on this solicitation, I certify that this firm/individual and/or subcontractor is properly licensed for providing the goods/services specified

    Contractor Name: _____ Subcontractor Name: _____

    License #: _____ Type: _____

13. **CRIMINAL CONVICTION CHECKS**: All criminal conviction checks must be concluded before the Contractor's employees gaining access to the Virginia Tech Campus. Employees who have separated employment from Contractor shall undergo another background check before re-gaining access to the Virginia Tech campus. Contractor shall ensure subcontractors conduct similar background checks. All criminal conviction checks will normally include a review of the individual's records to include Social Security Number Search, Credit Report (if related to potential job duties), Criminal Records Search (any misdemeanor convictions and/or felony convictions are reported) in all states in which the employee has lived or worked over the past seven years, and the National Sex Offender Registry. In addition, the Global Watch list (maintained by the Office of Foreign Assets Control of The US Department of Treasury) should be reviewed. Virginia Tech reserves the right to audit a contractor's background check process at any time. All employees must self-disclose any criminal conviction(s) occurring while assigned to the Virginia Tech campus. Such disclosure shall be made to Contractor, which in turn shall notify the designated Virginia Tech contract administrator within 5 days. If, any time during the term of the contract, Virginia Tech discovers an employee has a conviction which raises concerns about university buildings, property, systems, or security, the contractor shall remove that employee's access to the Virginia Tech campus, unless Virginia Tech consents to such access in writing. Failure to comply with the terms of this provision may result in the termination of the contract.

    a. The University has an awarded contract with a service provider for criminal conviction screening and background checks. The University prefers this vendor be utilized by the Contractor to comply with the contractual obligations and University Policy 4060.

    b. If Contractor chooses to utilize a different firm than the university's preferred provider, the Contractor's selected service provider shall be pre-approved by the Virginia Tech Police department as an acceptable service provider for criminal conviction and background checks to ensure that firm's service levels meet the requirements of University Policy 4060.

    c. If a Contractor chooses to utilize a different firm than the university's preferred provider, a five-day hold will be required before placement of employees deemed by the Contractor to meet all of the requirements of the University including a clean background check. Contractor shall provide the University with the name, date of birth and the last four digits of the social security number of all

individual(s) to be placed in a temporary position under this contract. The University reserves the right to conduct its own background check process during this hold period.

14. **FINAL INSPECTION**: At the conclusion of the work, the contractor shall demonstrate to the authorized owner's representatives that the work is fully operational and in compliance with contract specifications and codes. Any deficiencies shall be promptly and permanently corrected by the contractor at the contractor's sole expense prior to final acceptance of the work.

15. **INSURANCE**:

By signing and submitting a Proposal/Bid under this solicitation, the offeror/bidder certifies that if awarded the contract, it will have the following insurance coverages at the time the work commences. Additionally, it will maintain these during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.
During the period of the contract, Virginia Tech reserves the right to require the contractor to furnish certificates of insurance for the coverage required.
INSURANCE COVERAGES AND LIMITS REQUIRED:
A. Worker's Compensation - Statutory requirements and benefits.
B. Employers Liability - $100,000.00
C. General Liability - $2,000,000.00 combined single limit. Virginia Tech and the Commonwealth of Virginia shall be named as an additional insured with respect to goods/services being procured. This coverage is to include Premises/Operations Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability and Personal Injury Liability.
D. Automobile Liability - $500,000.00
E. Builders Risk – For all renovation and new construction projects under $100,000 Virginia Tech will provide All Risk – Builders Risk Insurance. For all renovation contracts, and new construction from $100,000 up to $500,000 the contractor will be required to provide All Risk – Builders Risk Insurance in the amount of the contract and name Virginia Tech as additional insured. All insurance verifications of insurance will be through a valid insurance certificate.

F. The contractor agrees to be responsible for, indemnify, defend and hold harmless Virginia Tech, its officers, agents and employees from the payment of all sums of money by reason of any claim against them arising out of any and all occurrences resulting in bodily or mental injury or property damage that may happen to occur in connection with and during the performance of the contract, including but not limited to claims under the Worker's Compensation Act. The contractor agrees that it will, at all times, after the completion of the work, be responsible for, indemnify, defend and hold harmless Virginia Tech, its officers, agents and employees from all liabilities resulting from bodily or mental injury or property damage directly or indirectly arising out of the performance or nonperformance of the contract.

16. **LABELING OF HAZARDOUS SUBSTANCES**: If the items or products requested by this solicitation are "Hazardous Substances" as defined by the # 3.1-250 of the Code of Virginia (1950), as amended, or # 1261 of Title 15 of the United States Code, then the offeror/bidder, by submitting its Proposal/Bid, certifies and warrants that the items or products to be delivered under this contract shall be properly labeled as required by the foregoing sections and that by delivering the items or products the offeror/bidder does not violate any of the prohibitions of # 3.1-252 of the Code of Virginia or Title 15 U.S.C. # 1263.

Lead: The contractor is contracted by Virginia Tech to perform work in buildings where lead-containing materials such as lead-based paint may be located. Work performed under this contract may impact these lead materials (for example, during building renovations), but does not include lead abatement or de-leading operations. The contractor will be informed by Virginia Tech project coordinator/manager

of the location of suspect and known lead containing materials in the work area(s) to which the contractor is assigned. The contractor shall provide all training and equipment required by 29 CFR 1926.62 for the safe performance of the work. The contractor may not perform de-leading or lead abatement unless they hold a valid Virginia Lead Contractor license and have been specifically retained to perform this work as a part of the contract. The contractor shall submit to Virginia Tech Environmental Health and Safety Services (EHSS) Department for review and approval his written Lead Work Plan which outlines work practices, precautions, procedures, and engineering controls to be used during work that disturbs lead prior to commencement of this work. Work will not proceed until the Lead Work Plan has been approved by EHSS**.**

17. **MATERIALS CONTAINING ASBESTOS:** The offeror/bidder shall not incorporate any materials into the work containing asbestos. The offeror/bidder shall not incorporate any material known by the offeror/bidder to contain a substance known to be hazardous to health when the building is occupied unless specifically approved by Virginia Tech or required by the specifications. If the offeror/bidder becomes aware that a material required by the specifications contains asbestos, it shall notify Virginia Tech immediately and shall take no further steps to acquire or install any such material.

18. **MATERIAL SAFETY DATA SHEETS**: Material Safety Data Sheets and descriptive literature shall be provided with the Proposal/Bid for each chemical and/or compound offered. Failure on the part of the offeror/bidder to submit such data sheets may be cause for declaring the Proposal/Bid as nonresponsive.

19. **PRICE ESCALATION/DEESCALATION**: Price adjustments for changes in the contractor's price of materials, labor and transportation may be permitted. Request for price adjustments for any other reasons will not be granted. No price increases will be authorized for 365 calendar days after the effective date of the contract. Contractor shall give not less than 30 days advance notice prior to the annual renewal of the contract of any desired price increase.

    The Contractor shall document the amount and proposed effective date of any general change in the price of materials, labor and transportation. Documentation shall be supplied with the contractor's request for increase which will (1) verify that the requested price increase is general in scope and not applicable just to Virginia Tech, and (2) verify the amount or percentage of increase which is being passed on to the contractor by the contractor's suppliers. Failure by the contractor to supply the aforementioned verification with the request for price increase will result in a delay of the effective date of such increase. The Virginia Tech Procurement Department may verify such change in price independently. The Virginia Tech Procurement Department may make such verification as it deems adequate. However, any increase which the Virginia Tech Procurement Department determines is excessive, regardless of any documentation supplied by the contractor, may be cause for cancellation of the contract by the Virginia Tech Procurement Department. The Virginia Tech Procurement Department will notify the contractor in writing of the effective date of any increase which is approved. However, the contractor shall fill all purchase orders received prior to the effective date of the price adjustments of the old contract prices.

    "Across the Board" price decreases are subject to implementation at any time and shall be immediately conveyed to Virginia Tech. The contractor is further advised that price decreases which affect the price of materials, labor, and transportation are required to be passed on to Virginia Tech immediately. Failure to do so will result in action to recoup such amounts.

20. **PRIME CONTRACTOR RESPONSIBILITIES**: The contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime Contractor. The contractor agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

21. **PROPOSAL/BID ACCEPTANCE PERIOD**: Any Proposal/Bid received in response to this solicitation shall be valid for (90) days. At the end of the (90) days the Proposal/Bid may be withdrawn at the written request of the offeror/bidder. If the Proposal/Bid is not withdrawn at that time it remains in effect until an award is made or the solicitation is cancelled.

22. **PROPOSAL/BID PRICES**: Proposal/Bid shall be in the form of a firm unit price for each item during the contract period.

23. **RENEWAL OF CONTRACT**: This contract may be renewed by Virginia Tech for a period of 1 year only under the terms and conditions of the original contract except as stated in A, B, C, & D below. Price increases may be negotiated only at the time of renewal. Written notice of Virginia Tech's intention to renew shall be given (approximately 90 days) prior to the expiration date of each contract period.
    A. If Virginia Tech elects to exercise the option to renew the contract for an additional one-year period, the contract price(s) for the additional year shall not exceed the contract prices of the original contract increased/decreased by no more than the percentage increase/ decrease of the “All” category of the CPI-W section of the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.
    B. If during the first one-year renewal Virginia Tech elects to exercise the option to renew the contract for the second additional one-year period, the contract price(s) for the second additional one-year period shall not exceed the contract price(s) of the first one-year renewal period increased/decreased by no more than the percentage increase/decrease of the “All” category of the CPI-W section for the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.
    C. If during the second one-year renewal Virginia Tech elects to exercise the option to renew the contract for the third additional one-year period, the contract price(s) for the third additional one-year period shall not exceed the contract price(s) of the second one-year renewal period increased/decreased by no more than the percentage increase/decrease of the “All” category of the CPI-W section for the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.
    D. If during the third one-year renewal Virginia Tech elects to exercise the option to renew the contract for the fourth additional one-year period, the contract price(s) for the fourth additional one-year period shall not exceed the contract price(s) of the third one-year renewal period increased/decreased by no more than the percentage increase/decrease of the “All” category of the CPI-W section for the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.

24. **SAFETY**: The contractor bears sole responsibility for the safety of its employees. The contractor shall take all steps necessary to establish, administer, and enforce safety rules that meet the regulatory requirements of the Virginia Department of Labor and Industry (VDLI) and the Occupational Safety and Health Administration (OSHA). The contractor shall take steps as necessary to protect the safety and health of university employees, students, and visitors during the performance of their work. In addition, the contractor must also provide the university with a written safety program that it intends to follow in pursuing work under this contract. By entering into a contract with Virginia Tech, the contractor and its subcontractors agree to abide by the requirements described in Safety Requirements for Contractors and Subcontractors located on Virginia Tech’s Environmental, Health and Safety Services (EHSS) web site at this URL https://ehs.vt.edu/programs/occupational-safety/contractor-safety.html
    A copy of the publication may also be obtained by contacting EHS at 540/231- 5985. No work under this contract will be permitted until the university is assured that the contractor has an adequate safety program in effect.

25. **SIDEWALK POLICY**: Driving on sidewalks is allowed when there is no other way to get a needed vehicle to a designated place or building on campus. The vehicle operator shall be made aware that

extreme caution shall be used to operate the vehicle in a way that will not be a hazard or hindrance to pedestrians using the walk. The contractor shall be responsible for any damage to turf and anything that is located adjacent to the walk. Parking an unattended vehicle on a sidewalk is strictly prohibited by State Law. The contractor is allowed to park a vehicle on a sidewalk if there is no other way to perform necessary work. The procedure to obtain a permit to operate a vehicle on sidewalks is the same as for the turf as outlined in Turf Policy. Any vehicle parked illegally on sidewalks shall be subject to ticketing, fines and towing if necessary.

26. **SUBCONTRACTS**: No portion of the work shall be subcontracted without prior written consent of Virginia Tech. In the event that the contractor desires to subcontract some part of the work specified herein, the contractor shall furnish Virginia Tech the names, qualifications and experience of their proposed subcontractors. The contractor shall, however, remain fully liable and responsible for the work to be done by his subcontractor(s) and shall assure compliance with all requirements of the contract.

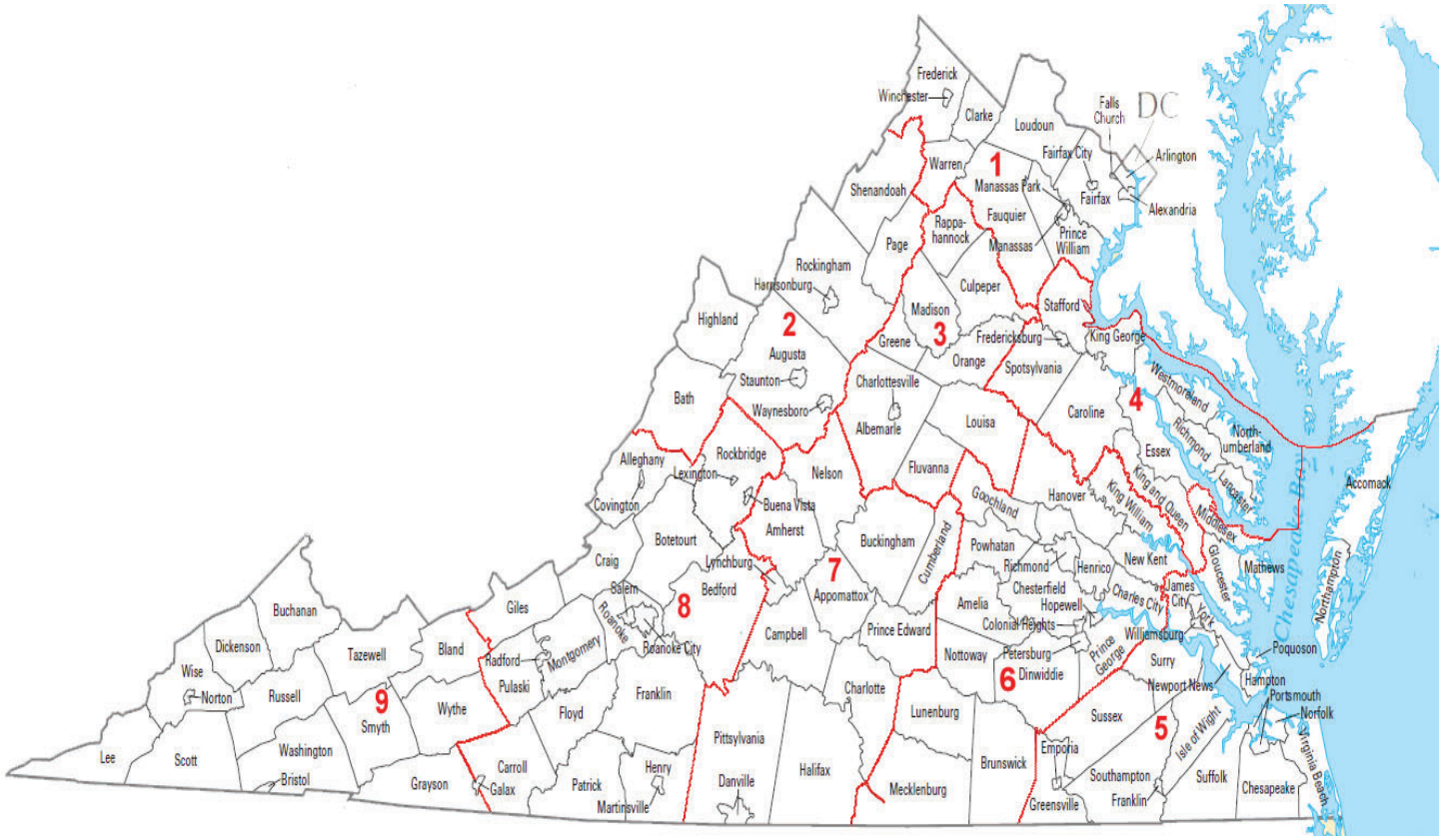
27. **TURF POLICY:** Parking or driving on campus turf or sidewalk is strictly prohibited, except as specifically directed or otherwise allowed by the Physical Plant Grounds Department. In this case, a turf permit must be obtained from Virginia Tech Parking Services and displayed by the vehicle. Turf parking is not allowed under the canopy of any tree on campus. Any vehicle parked illegally on turf or sidewalks shall be subject to ticketing and fines.

28. **WARRANTY (COMMERCIAL)**: The contractor agrees that the supplies or services furnished under any award resulting from this solicitation shall be covered by the most favorable commercial warranties the contractor gives any customer for such supplies or services and that the rights and remedies provided therein are in addition to and do not limit those available to Virginia Tech by any other clause of this solicitation. A copy of this warranty must be furnished with the Proposal/Bid.

29. **WORK SITE DAMAGES**: Any damage to existing utilities, equipment or finished surfaces resulting from the performance of this contract shall be repaired to the Owner's satisfaction at the contractor's expense.

ATTACHMENT B

Zone Map



Virginia Association of State College & University Purchasing Professionals (VASCUPP)

List of member institutions by zones

Zone 1
George Mason University (Fairfax)

Zone 2
James Madison University (Harrisonburg)

Zone 3
University of Virginia (Charlottesville)

Zone 4
University of Mary Washington (Fredericksburg)

Zone 5
College of William and Mary (Williamsburg)
Old Dominion University (Norfolk)
Christopher Newport University (Newport News)
Norfolk State University (Norfolk)

Zone 6
Virginia Commonwealth University (Richmond)

Zone 7
Longwood University (Farmville)

Zone 8
Virginia Military Institute (Lexington)
Virginia Tech (Blacksburg)
Radford University (Radford)

Zone 9
University of Virginia - Wise (Wise)

ATTACHMENT C
PRICE SCHEDULE (To be completed by offeror. See instructions for completion in Section VII, 4)
ZONE_____

Item #	Description of flooring	Qty	Price per SF	Extended Price
1a	Epoxy	1000	$_____	$_____
1b	Epoxy w/ 4” Epoxy wall base	1000	$_____	$_____
1c	Epoxy	2000	$_____	$_____
1d	Epoxy w/ 4” Epoxy wall base	2000	$_____	$_____
1e	Epoxy	3000	$_____	$_____
1f	Epoxy w/ 4” Epoxy wall base	3000	$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
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			$_____	$_____
			$_____	$_____
			$_____	$_____

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
PROCUREMENT DEPARTMENT

ADDENDUM NO. 1

DATE:	December 20, 2023
TO:	All Offerors
FROM:	Mary Seyler, Contracting Officer
TOTAL PAGE(S):	1 page (not including attachments)
SOLICITATION TITLE:	Epoxy and Industrial Flooring
SOLICITATION NUMBER:	337312407

I. CLARIFICATIONS AND ADDITIONAL INFORMATION

This addendum is being issued to change the proposal due date and time form January 5, 2024 at 3PM to January 12, 2024 at 3PM.

End Of Addendum 1

Virginia Tech
Submission for RFP #337312407
January 11, 2024

Supplier:

Industrial Floor Systems, Inc.
308 7th Street, Roanoke, VA 24016
P.O. Box 20956, Roanoke, VA 24018
Phone (540) 725-7641
office@industrialfloorsystems.net
Contractor's License #[redacted]
SWAM Certification #[redacted]

Table of Contents

VII.1
Quality of Products/Services offered and suitability for the intended purpose:
We are pricing Protective Industrial Polymers and Sherwin Williams (Duraflex) products. Protective Industrial Polymers (PIP) manufactures complete industrial flooring systems for manufacturing, commercial, food and beverage, pharmaceutical and biotech markets. Industrial Floor Systems, Inc. has been installing PIP products for more than ten years with great success. Industrial Floor Systems, Inc. has been installing Sherwin Williams resinous flooring products for 19 years.

Product Data and Safety Data Sheet for each product is attached after the Approved Applicator Letters.

1a, 1 b,1c, 1d, 1e, 5a Epoxy 3-Coat System includes:
Floor Products:
PIP 1000 HB
PIP 2000 UR

Cove Base Products:
PIP 3600
PIP Trowel Blend Sand

2a, 2b, 2c, 2d, 2e, 2f, 5b Urethane System includes:
Floor Products:
Sherwin Williams 3477 Primer
Sherwin Williams (Dur-A-Flex) Poly-Crete MD
Sherwin Williams 4641 Resutile HPS
Sand

Cove Base Products:
Sherwin Williams 3521
Sherwin Williams Trowel Blend Sand

3a, 3b, 3c, 3d, 3e, 3f, 5c Epoxy Flake System includes:
Floor Products:
PIP 1000 HB
PIP 1000 HC
PIP 2100 UR
Vinyl Flake

Cove Base Products:
PIP 3600
PIP Trowel Blend Sand

VII.1 Continued

4a, 4b, 4c, 4d, 4e, 5d Double Broadcast Quartz System includes:
Floor Products:
PIP 1000 HB
PIP 1000 HC
PIP 1000 HC
PIP 2100 UR
Decorative Quartz

Cove Base Products:
PIP 3600
PIP Trowel Blend Sand

VII.2
Qualifications and experience of offeror in providing the goods and services:
Industrial Floor Systems, Inc. has been in business since 1986 and is owned by the founders Kenneth Cecil and Pamela K. Mohler. We have installed resinous flooring in all areas of industry from schools, restaurants, manufacturing and military bases to nuclear facilities and we have been installing epoxy flooring at Virginia Tech since 2007. We have an excellent safety record. Our commitment to quality and excellent service has been the foundation of our business for the past 38 years and we strive to build long-term relationships with all our customers.

Class A Contractors License: #[redacted]
SWAM Certification #[redacted]
Approved Applicator Letters attached with Product Data and Safety Data Sheets.

Owners:
Pamela K. Mohler and Kenneth M. Cecil

Project Executive and Installations Manager:
Michael (Alex) Cecil-15 Years' Experience in Epoxy Flooring Installation and Estimating

Project Estimator:
Aubrie K. Cecil-5 Years' Experience in Accounts Payable, Accounts Receivable, Estimating and Project Management

Supervisors:
Roger Blankenship-35 Years' Experience Installing Epoxy Flooring
Paden Miller-15 Years' Experience Installing Epoxy Flooring

Experience at Virginia Tech:
Virginia Tech Contract for Epoxy Flooring 2019
VT Vet Med and VT Vet Med Large Animal Facility
VT Lane Stadium
VT ICTAS
VT HABB
VT Merryman
Various classrooms and labs across VT campus

VII.2 Continued

Experience at similar facilities:
JMU-Quartz Double Broadcast System, Urethane System
Grayson County Schools-Vinyl Flake System and other systems
Auburn Middle School-Quartz Double Broadcast System
Blacksburg High School-Quartz Double Broadcast System

References

[redacted]
Virginia Tech
[redacted]

[redacted]
Cargill Protein Group
[redacted]

[redacted]
Hapco Pole Products
[redacted]

VII.3
Specific plans or methodology to be used to provide services:
Industrial Floor Systems, Inc. provides resinous flooring of all types including thin mil coatings, troweled mortar, urethane flooring, vinyl flake epoxy flooring and decorative quartz flooring.

Timelines for Installation of flooring based on 500 to 3000 sf:
Epoxy-3 Coat: 3 to 5 Days
Urethane Mortar: 3 to 5 Days
Epoxy Flake: 4 to 6 Days
Double Broadcast Quartz: 4 to 6 Days

Industrial Floor Systems, Inc. reviews with the buyer/end user numerous considerations prior to floor product selection. Environmental conditions such as UV exposure and heat exposure are considered along with the condition of the existing substrate. Usage considerations such as moisture and/or chemical exposure, equipment wear and loading, animal and/or pedestrian traffic are reviewed. We consult directly with manufacturer's representatives to determine the best flooring solution. We then review flooring recommendations with the buyer/end user to finalize the best solution.

VII.4

Price:

ATTACHMENT C

PRICE SCHEDULE 2024

Zone Virgnina Tech and Zone 8

Item#	Description of flooring	Qty	Price per SF	Cove Base per LF
1a	Epoxy-3 Coat System	1000	$8.05	
1b	Epoxy-3 Coat System with 4-in cove base	1000	$8.05	$9.00 per lf
1c	Epoxy-3 Coat System	2000	$6.08	
1d	Epoxy-3 Coat System with 4-in cove base	2000	$6.08	$9.00 per lf
1e	Epoxy-3 Coat System	3000	$5.41	
1f	Epoxy-3 Coat System with 4-in cove base	3000	$5.41	$9.00 per lf
2a	Urethane 3/16-in	1000	$22.96	
2b	Urethane 3/16-in with 4-in cove base	1000	$22.96	$9.00 per lf
2c	Urethane 3/16-in	2000	$20.00	
2d	Urethane 3/16-in with 4-in cove base	2000	$20.00	$9.00 per lf
2e	Urethane 3/16-in	3000	$19.01	
2f	Urethane 3/16-in with 4-in cove base	3000	$19.01	$9.00 per lf
3a	Epoxy Flake Single Broadcast	1000	$18.50	
3b	Epoxy Flake Single Broadcast with 4-in cove base	1000	$18.50	$9.00 per lf
3c	Epoxy Flake Single Broadcast	2000	$14.87	
3d	Epoxy Flake Single Broadcast with 4-in cove base	2000	$14.87	$9.00 per lf
3e	Epoxy Flake Single Broadcast	3000	$13.01	
3f	Epoxy Flake Single Broadcast with 4-in cove base	3000	$13.01	$9.00 per lf
4a	Double Broadcast Quartz	1000	$18.45	
4b	Double Broadcast Quartz with 4-in Cove Base	1000	$18.45	$9.00 per lf
4c	Double Broadcast Quartz	2000	$14.49	
4d	Double Broadcast Quartz with 4-in Cove Base	2000	$14.49	$9.00 per lf
4e	Double Broadcast Quartz	3000	$13.62	
4f	Double Broadcast Quartz with 4-in Cove Base	3000	$13.62	$9.00 per lf
5a	Epoxy-3 Coat System-no texture to light texture	500	$10.69	$9.00 per lf
5b	Urethane 3/16-in with 4-in cove base	500	$28.24	$9.00 per lf
5c	Epoxy Flake Single Broadcast with 4-in cove base	500	$22.45	$9.00 per lf
5d	Double Broadcast Quartz with 4-in Cove Base	500	$23.86	$9.00 per lf

ATTACHMENT C
PRICE SCHEDULE 2024
Zones 1, 2, 3, 4, 5, 6, 7 and 9.

Item#	Description of flooring	Qty	Price per SF	Cove Base per LF
1a	Epoxy-3 Coat System	1000	$8.26	
1b	Epoxy-3 Coat System-4-in cove base	1000	$8.26	$9.00 per lf
1c	Epoxy-3 Coat System	2000	$6.21	
1d	Epoxy-3 Coat System-4-in cove base	2000	$6.21	$9.00 per lf
1e	Epoxy-3 Coat System	3000	$5.53	
1f	Epoxy-3 Coat System-4-in cove base	3000	$5.53	$9.00 per lf
2a	Urethane 3/16-in	1000	$23.28	
2b	Urethane 3/16-in with 4-in cove base	1000	$23.28	$9.00 per lf
2c	Urethane 3/16-in	2000	$20.21	
2d	Urethane 3/16-in with 4-in cove base	2000	$20.21	$9.00 per lf
2e	Urethane 3/16-in	3000	$19.19	
2f	Urethane 3/16-in with 4-in cove base	3000	$19.19	$9.00 per lf
3a	Epoxy Flake Single Broadcast	1000	$18.86	
3b	Epoxy Flake Single Broadcast with 4-in cove base	1000	$18.86	$9.00 per lf
3c	Epoxy Flake Single Broadcast	2000	$15.11	
3d	Epoxy Flake Single Broadcast with 4-in cove base	2000	$15.11	$9.00 per lf
3e	Epoxy Flake Single Broadcast	3000	$13.18	
3f	Epoxy Flake Single Broadcast with 4-in cove base	3000	$13.18	$9.00 per lf
4a	Double Broadcast Quartz	1000	$18.84	
4b	Double Broadcast Quartz with 4-in Cove Base	1000	$18.84	$9.00 per lf
4c	Double Broadcast Quartz	2000	$14.74	
4d	Double Broadcast Quartz with 4-in Cove Base	2000	$14.74	$9.00 per lf
4e	Double Broadcast Quartz	3000	$13.84	
4f	Double Broadcast Quartz with 4-in Cove Base	3000	$13.84	$9.00 per lf
5a	Epoxy-3 Coat System-no texture to light texture	500	$10.98	$9.00 per lf
5b	Urethane 3/16-in with 4-in cove base	500	$28.74	$9.00 per lf
5c	Epoxy Flake Single Broadcast with 4-in cove base	500	$22.95	$9.00 per lf
5d	Double Broadcast Quartz with 4-in Cove Base	500	$24.97	$9.00 per lf

VII.4 Continued
Industrial Floor Systems, Inc.

Additional Pricing Notes and Clarifications:

1. Specialty colors and safety colors may be an extra charge.
2. Multiple colors in one area will be an additional charge.
3. Prices based on new concrete or concrete in good condition.
4. Concrete and joint repair may create additional charges.
5. Urethane cement pricing is based on 40-60 mesh sand broadcast. The use of finer, 80-120 mesh aggregate, may result in additional charges. All other systems are priced to receive either no texture, glass beads or shark grip in urethane topcoat. Heavy or aggressive texture additives such as aluminum oxide or silica carbide will result in additional charges.
6. Epoxy flake pricing is based on one broadcast of vinyl flake. Decorative quartz pricing is based on a double broadcast of quartz.
7. Moisture vapor transmission reducing primer may need to be used in areas where the relative humidity of the concrete exceeds manufacturer's written specifications for installation. Prices for this primer are not included in the system price and vary depending on the level of moisture detected and the flooring system being installed.
8. If it is suspected that the relative humidity of the substrate may exceed manufacturer's written specifications, a site visit will be required prior to floor installation to test the relative humidity of the concrete and may result in additional charges.
9. Prices based on power being supplied by Virginia Tech.
10. Prices based on Virginia Tech providing dumpster.
11. Prices based on Virginia Tech providing heating and cooling as needed per manufacturer's specifications.

VII.5

Participation of Small, Woman-owned and Minority-owned Business (SWAM) Business:

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF SMALL BUSINESS & SUPPLIER DIVERSITY
101 N. 14th Street, 11th Floor
Richmond, VA 23219

INDUSTRIAL FLOOR SYSTEMS, INC.
is a certified Small,Women Owned Business meeting all the eligibility requirements set forth under the Code of Virginia Section 2.2-16.1 et seq. and Administrative Code 7VAC 13-20 et seq.

Certification Number: [redacted]
Valid Through: Mar 22, 2028

Accordingly Certified

Willis A. Morris

Willis A. Morris, Director

CERTIFIED SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Small Business & Supplier Diversity

Signed Submission Page and Addenda

RFP # 337312407, Epoxy & Industrial Flooring Systems

INCLUDE THIS PAGE WITH YOUR PROPOSAL, SIGNATURE AT SUBMISSION IS REQUIRED

DUE DATE: Proposals will be received until January 5, 2023 at 3:00 PM. Failure to submit proposals to the correct location by the designated date and hour will result in disqualification.

INQUIRIES: All inquiries for information regarding this solicitation should be directed to Mary Seyler, Phone: (540) 231- 3813 e-mail: mseyler@vt.edu. All inquiries will be answered in the form of an addendum. Inquiries must be submitted by 3PM on December 15, 2023. Inquiries must be submitted to the procurement officer identified in this solicitation.

PROPOSAL SUBMISSION:

Please note, proposal submission procedures have changed effective March 2023.

Proposals may NOT be hand delivered to the Procurement Office.

Proposals should be submitted electronically through Virginia Tech's procurement portal. This portal allows you access to view business opportunities and submit bids and proposals to Virginia Tech digitally and securely.

Proposals must be submitted electronically at:
https://bids.sciquest.com/apps/Router/PublicEvent?CustomerOrg=VATech

Vendors will need to sign up through this procurement portal, hosted by Jaggaer. **It is encouraged for all vendors to register prior to the proposal submission deadline to avoid late submissions**. Registration is easy and free. If you have any challenges with the registration process, please contact Jaggaer Support at 1-800-233-1121 or procurement@vt.edu. It is recommended to use Chrome as your browser.

Click on the opportunity and log in to your vendor account to begin preparing your submission. Upon completion, you will receive a submission receipt email confirmation. Virginia Tech will not confirm receipt of proposals. It is the responsibility of the offeror to make sure their proposal is delivered on time.

Hard copy or email proposals will not be accepted. Late proposals will not be accepted, nor will additional time be granted to any individual Vendor.

Attachments must be smaller than 50MB in order to be received by the University.

In compliance with this Request For Proposal and to all the conditions imposed therein and hereby incorporated by reference, the undersigned offers and agrees to furnish the goods or services in accordance with the attached signed proposal and as mutually agreed upon by subsequent negotiation.

AUTHORIZED SIGNATURE: _____ Date: 1/9/2024

[INCLUDE THIS PAGE]

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
PROCUREMENT DEPARTMENT

ADDENDUM NO. 1

DATE:	December 20, 2023
TO:	All Offerors
FROM:	Mary Seyler, Contracting Officer
TOTAL PAGE(S):	1 page (not including attachments)
SOLICITATION TITLE:	Epoxy and Industrial Flooring
SOLICITATION NUMBER:	337312407

I. CLARIFICATIONS AND ADDITIONAL INFORMATION

This addendum is being issued to change the proposal due date and time form January 5, 2024 at 3PM to January 12, 2024 at 3PM.

End Of Addendum 1

1/7/2024

PROTECTIVE
INDUSTRIAL POLYMERS

7875 Bliss Parkway
North Ridgeville, OH 44039
440-327-0015
440-353-0549 - FAX
info@protectpoly.com
www.protectpoly.com

January 9, 2024

To Whom it May Concern,

Industrial Floor Systems, based in Roanoke, VA is a recognized Protective Industrial Polymers Contractor. They have been instructed and possess proven abilities as it relates installation of PIP Epoxies, Urethanes, Polymer Mortars, ESD, Urethane Concrete and Specialty Products as manufactured by Protective Industrial Polymers.

As of the date of this letter this installer is fully recognized for both results and integrity by Protective Industrial Polymer.

Sincerely,

Protective Industrial Polymers

Patrick Scudder
President
440-327-0015

SHERWIN-WILLIAMS®
HIGH PERFORMANCE FLOORING

January 8, 2024

Industrial Floor Systems, Inc
308 Seventh Street
Roanoke, VA 24016

RE: Approved/Qualified Contractor

To Whom It May Concern:

Industrial Floor Systems, Inc. is an Approved/Qualified Contractor for the following High Performance Flooring & Wall Systems:

- Slurry Broadcast
- Coatings
- Deco Flake
- Industrial Trowel(Epoxy Mortar)
- *Urethane Cement*
- Ceramic Carpet/Deco Quartz
- Wall Systems
- SofTop

If you need anything further, please feel free to contact me at (434)665-9186.

Regards,

W. Brent Haynes

W. Brent Haynes
The Sherwin-Williams Co.
High Performance Flooring
NACE-CIP Level 2 Cert# 38232
William.b.haynes@sherwin.com

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Technical Data Sheet

PIP 1000 CR/HB/FS/ST

Universal Epoxy Coating and Primer System

PROTECTIVE INDUSTRIAL POLYMERS

7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:

PIP 1000 series coatings are a two-component or three component (with color packs), universal, 100% solids, epoxy resin coating systems that can be applied either clear or pigmented. **PIP 1000** has a universal, clear unfilled "A" component (1000-A) and is supplied with a choice of curing agents to achieve specific cure rates, chemical resistance requirements and final aesthetics. This product produces a gloss finish.

USES:

Use as a primer, build coat, broadcast, anchor and top coat simply by selecting and mixing with the correct curing agent.

ADVANTAGES:

- Match the curing agent to the needs of the project.
- Extremely low odor
- High build application
- Excellent impact and abrasion resistance
- Seals substrate reducing water vapor intrusion
- Resists staining from cleaning and industrial chemicals
- Complies with VOC regulations for industrial maintenance coatings in the OTC and CA*. (*including SCAQMD when thinned to maximum)

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:

3 Gallon Clear Kit:
1000-A/2
1000xx-B/1 (xxx denotes either HB, CR, FS or ST)
15 Gallon Clear Kit:
1000-A/5 (2 ea.)
1000xx-B/5
159 Gallon Clear Kit:
1000-A/55 (2 ea.)
1000xx-B/55

3.125 Gallon Pigmented Kit:
1000-A/2
1000xx-B/1
CPU-###/P
15.63 Gallon Pigmented Kit:
1000-A/5 (2 ea.)
1000xx-B/5 (1 ea.)
CPU-###/P (5)
165.6 Gallon Pigmented Kit:
1000-A/55 (2 ea.)
1000xx-B/55
CPU-###/P (53)

* xx denotes suffix for specialized hardener

OPTIONS:

Color-Many standard and custom colors are available. Please refer to the price list for available colors. Brilliant or pastel colors may require multiple coats or double color packs to obtain full hide on a substrate of dis-similar color.
Various aggregates of different size shapes and composition can be incorporated into **PIP 1000** to improve traction in slip hazard areas.

LIMITATIONS:

Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, resin systems may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED. Please contact Technical Service for additional recommendations. **PIP 1000 will** amber over time from UV exposure. Top coating with a pigmented aliphatic urethane will provide UV stability.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥215 °F (102°C)
Volume Solids (mixed)	ASTM D2369	100 %
Mixed Viscosity	ASTM D2196	400-700 cPs
Dry Time	ASTM D5895	Tack Free 4-6 hr Dry 6-10 hr Full Cure 7 days
VOC-Volatile Organic Compound	ASTM D3960	0 g/l clear & pigmented ≤250 g/l with max thinning

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	75 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/NS-36)
Tensile Strength	ASTM D2370	12,000 psi
Adhesion to Concrete	ASTM D4541	350 psi concrete failure
Impact	ASTM D2794	40 in.lbs Direct & Reverse
Hardness (Shore D) Hardness (Pencil)	ASTM 2240 ASTM D3363	85-90 2H

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Dry Film Thickness	at 15 mils WFT	15 mils
Water Absorption	ASTM C413	<0.5%
Flame Spread	ASTM E84	Class A
Flammability Rating	ASTM E648	Class 1
Flammability	ASTM D635	Self Extinguishing

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*: Consult Protective Industrial Polymers for specific requirements.

RECOMMENDED APPLICATION RATE:
7-10 mils as a primer (optional additional of xylene solvent);
up to 30 mils as a coating.

Primer Applications:
Up to 1 gallon of xylene solvent can be added per 3.00 gallons of resin (total 4.00 gallons) for a maximum concrete penetration. VOC rating at this dilution is < 250 g/l. 1000CR-B is the recommended hardener for this application.

CURING AGENT OPTIONS:

1000CR-B curing agent offers the best chemical resistance and is recommended for use as a direct to concrete primer. This coating is not intended for final finish applications which require stringent UV stability as it will amber the most in comparison to the other curing agents. However, it is the most chemical resistant version of the PIP 1000-series coatings. 1000CR is not intended for direct-to-concrete applications where there are known or suspected high levels of water vapor transmission.

1000HB-B is a general-purpose curing agent with the best overall aesthetics and gloss properties. It has the least resistance to amine blush. PIP 1000HB is not intended for direct-to-concrete applications where there are known or suspected high levels of water vapor transmission.

1000FS-B curing agent provides up to a 50% faster curing time than 1000HB-B, 1000CR-B and 1000ST-B. 1000FS-B exhibits good aesthetics with low blush propensity considering its fast curing properties. 1000FS-B will amber (more than 1000HB but less than 1000CR) and is not recommended for final finish applications which require stringent UV stability. 1000FS-B has a reduced working time and recoat window and must be sanded within 8 hours in temperatures above 75F and 12 hours in temperatures between 60 and 70F. Contact Protective Industrial Polymers with specific requirements, recommendations and limitations.
1000 FS is not intended for direct-to-concrete applications where there are known or suspected high levels of water vapor transmission.

1000ST-B is a general purpose curing agent with increased rheology which provides for an orange peel or slightly stippled finish when applied at 5-6 mils. 1000ST exhibits good UV and chemical resistance properties, excellent gloss and aesthetics with extremely low blush propensity. 1000ST is not intended for direct-to-concrete applications where there are known or suspected high levels of water vapor transmission.

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

SUBSTRATE: The concrete substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. Do not coat if concrete contains Type III Portland Cement. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if Sodium or Potassium metasilicate hardeners or densifiers are suspected or have been utilized. Concrete must have a minimum internal tensile strength of 200 psi when tested in accordance of ASTM C1583. Concrete must have a maximum relative humidity of less than 75% when tested as per ASTM F2170.

MOISTURE VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 75% (using ASTM F2170), Protective Industrial Polymers must be consulted for further specific recommendations.
Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Testing for these prior to application is always recommended. Consult your PIP representative for approved mitigation treatments.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the SDS (Safety Data Sheet)**
- **Jiffy® Mixer Blade model ES**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼-3/8 inch nap**
- **Application Squeegee**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.

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Mechanical Preparation: Shot Blasting or aggressive diamond grinding the surface is the preferred method of preparation. The success of industrial diamond grinding as a concrete preparation method will vary depending on technique and the hardness of the concrete.

JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

MIXING: ***In bulk packaging containers such as full 5-gallon containers and drums, pre-mix the Part A prior to in field metering.***
Mix ratio for curing agents 1000HB, 1000CR 1000FS and 1000ST is 2 Parts A to 1 part B by volume. A pint of CPU color is recommended per 3 gallon mix. The color pack should be added and mixed in homogenously prior to adding the Part B hardener. Mix all components together for 2-3 minutes with a Jiffy® ES mix blade attached to a slow speed drill. Mix only enough material at one time that can be applied without exceeding the pot life. ***Note:*** Once this material is mixed, it can't be resealed for later use.

APPLICATION:

APPLY PIP 1000 to the floor surface using a notched or flat squeegee depending on desired thickness. Leaving the material sit in the pail longer than 5 minutes will result in an increase of viscosity and reduce leveling properties. Back roll and evenly spread the wet coating using a ¼-3/16" inch nap non-shed roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air to the surface.

SPREADING RATE: When **PIP 1000** is applied as a primer, surface irregularities and porosity in the concrete may affect coverage rate. Be sure to plan accordingly as there may be a need for extra material to provide proper coverage. Material applied too heavy may blister or develop stress cracks or may remain soft for an extended time if applied very heavy in puddles at temperatures below 60F. Too little material may produce dry spots and a non-uniform look. The best practice is to measure and grid the floor to be sure of proper application rate.

CURING (DRYING): Allow the coating to cure (dry) for a minimum of 12 hours for 1000HB, 1000CR or 1000ST after application at 75°F (24°C) and 50% RH before opening the floor to light traffic, allow more time for low temperatures and higher humidity or for heavier traffic.
For 1000FS, allow the coating to cure (dry) for a minimum of 6 hours after application at 75°F (24°C) and 50% RH before opening the floor to light traffic, allow more time for low temperatures and higher humidity or for heavier traffic.
As a general rule, a temperature change of every +/-10-degree F will either double the cure time or cut in half. Full coating properties may take up to 7 days to develop.

RECOAT: **PIP 1000** can be top coated with other PIP urethanes or epoxies within 24 hours (see exception under 1000FS-B curing agent) at 70-75F 30% RH without sanding or may be used as a topcoat over existing (sound) PIP epoxy coatings. If the re-coat window has expired, the prior cured coating surface must be sanded with 100 grit sand paper or sanding screen installed on a swing-type floor buffer. Sand to a uniform dulled surface. Remove all sanding debris with a vacuum and damp mop. Scrub with detergent and rinse with clean water. Surface must be dry before coating.

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

DISPOSAL: Dispose in accordance with federal, state, and local regulations.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).

CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

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WARRANTY AND CONDITIONS OF USAGE

WARRANTY AND LIMITATION OF LIABILITY: Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

Technical Data Sheet

PIP 2000 UR

Low-Odor, High Solids, High-Gloss Pigmented Urethane System

PROTECTIVE INDUSTRIAL POLYMERS

7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:
PIP 2000 UR is a high-solids, high-gloss, three-part, aliphatic pigmented polyurethane coating. It can be applied over an epoxy primer or used to recoat an existing epoxy or urethane floor.

USES:
Suited for productions areas, show room floors, aircraft hangers, warehouses and other places where physical and chemical resistance combined with light stability are important.

ADVANTAGES:
- High-gloss provides UV stability when applied pigmented and light reflectivity
- Excellent resistance to tire staining (hot or cold)
- Resists Skydrol®, jet fuels and other chemicals
- Four times floor life compared to most epoxies
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC & CA* (*excluding SCAQMD)
- Excellent wet edge color stability

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:
Volume Mix Ratio: .5A : 2B : .125C

1.31 gallons PIP 2000 UR Pigmented (350 **SF @ 6 mils smooth)**
2000-A/Q
2000-B/1
CPU-xxxx/HP

2.62 gallons PIP 2000 UR Pigmented (701 SF @ 6 mils smooth)
2000-A/HG
2000-B/2
CPU-xxxx/P

2.62 gallons PIP 2000 UR Pigmented GlossGrip #10 Texture (1200 SF @ 3.5 mils)
2000-A/HG
2000-B/2
CPU-xxxx/P
GlossGrip #10/P

2.88 gallons PIP 2000 UR Pigmented DiamondWear Texture (1320 SF @ 3.5 mils)
2000-A/HG
2000-B/2
CPU-xxxx/P
DiamondWear/HG

Some pastel or vivid colors may require 2 pints (1 quart) of color for enhanced opacity when applying a single coat over dis-similar substrates. Consult Protective Industrial Polymers for specific recommendation.

OPTIONS: *Low temperature and Low Humidity*
For applications where the temperatures are between 55°F-65°F combined with relative humidity levels (RH) between 20-35%, the use of **PIP 2000-2100-Series Spike** accelerator is recommended. Use of this accelerator will hasten the cure to be similar of the standard material in normal conditions (70-80F with 35-80% RH). The use of this accelerator in normal conditions will result in a shorter working time, higher viscosity build, reduced leveling and increases stickiness and roller drag. When relative humidity (RH) is below 20%, please consult Protective Industrial Polymers for specific recommendations and limitations.

See PIP 2000-2100-Series Spike Technical Data Sheet for more detailed information regarding the use of this accelerator.

DO NOT apply coatings unless the surface temperature is more than five degree over the dew point. During the application and cure of the coating, the substrate temperature, material temperature and room conditions should be ideally maintained between 65°F (18°C) and 90°F (32°C) with relative humidity (RH) between 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.

Color Pack: 0 VOC Color packs designated as CPU-xxxx are used with **PIP 2000 UR**. Many standard and custom colors are available; please refer to the price list for available colors. It is important to have a color consistent floor in a similar color before application of **PIP 2000 UR** or multiple coats may be required.

Texture: **PIP GlossGrip #10 Additive** can be incorporated into **PIP 2000 UR** to create a wear texture while maintaining an easily cleaned glossy surface.

LIMITATIONS:
Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, **PIP 2000 UR** may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED; please contact Technical Service for additional recommendations.

DO NOT APPLY PIP 2000 DIRECT TO PIP 1300 MVR. ALWAYS APPLY ANOTHER PIP EPOXY PRODUCT SUCH AS PIP 1000 SERIES COATINGS ON TOP OF THE PIP 1300 MVR BEFORE APPLYING THE PIP 2000 URETHANE.

UV Protection: **If applied as a clear coating (without the color pack), PIP 2000 UR will not protect underlying epoxy coatings from UV radiation and subsequent yellowing of the epoxy. Please use PIP 2100 UR-Gloss or PIP 2100 UR-Satin for clear applications requiring UV protection.**

PIP 2000 VIVID

Vivid Colors: Bold vivid colors especially in the blue and green family require a special Part A and Part B; 2000-A VIVID and 2000-B VIVID if a high gloss finish is desired. Failure to utilize the 2000 Vivid will result in a dull irregular sheen. Applicable colors currently as of this update are:

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1. CPU-26 Hyper Blue
2. CPU-31- Cat Green
3. CPU-61- Deep Blue
4. CPU-75- Regal Blue
5. CPU-142 Blue Gray
6. CPU-305-NSK Green
7. CPU-350 Safety Red
8. CPU-357 Magnum Green
9. CPU-374 Dirty Blue
10. CPU-450- Safety Blue
11. CPU-514- Paradise Green
12. CPU-526- Aisle Green
13. CPU-589- Grass Green
14. CPU-945 Pantone
15. CPU -2935 Lazer Blue (RAL)
16. CPU-2945 Signal Blue (RAL
17. CPU-6018 Green

Consult Protective Industrial Polymers for updates to this list of colors if uncertain as to the use of the 2000 VIVID product.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	187 °F (86°C)
Volume Solids (mixed)	ASTM D2369	85-90%
Mixed Viscosity	ASTM D2196	400 cPs
Dry Time	ASTM D5895	Tack Free 6 hr Dry 12-16 hr Full Cure 7-14 days
VOC-Volatile Organic Compound	ASTM D3960	< 175 g/l Clear & Pigmented

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Taber CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	25 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/GlossGrip #10
Tensile Strength	ASTM D2370	2300 psi
Elongation	ASTM D2370	5%
Impact	ASTM D2794	140 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	3H
Dry Film Thickness	at 4 mils WFT	3.5 mils
Flammability	ASTM E648	Class 1
Flame Spread	ASTM E84	Class A

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*:

PIP 2000 UR	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	G	G
30% Hydrochloric	G	F
10% Nitric	G	F
50% Phosphoric	G	F
37% Sulfuric	F	P
ACIDS, ORGANIC		
1110% Acetic	G	F
10 % Citric	G	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	G	G
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	E	E
Mineral Spirits	E	E
Xylene	E	E
Methylene Chloride	P	P
MEK	G	G
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E

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20% Sodium Chloride	E	E
10% TSP	E	E

*Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.

Legend: **E- Excellent (Not Effected)**
G-Good (Limited Negative Effect)
F-Fair (Moderate Negative Effect)
P-Poor (Unsatisfactory)

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

PIP 2000 UR must be applied to an epoxy or other approved primer or base coat. Sections below detailing substrate, moisture and vapor/contamination apply to the required conditions of the concrete substrate prior to application of an epoxy primer.

SUBSTRATE: The concrete substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. Do not coat if concrete contains Type III Portland Cement. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if Sodium or Potassium metasilicate hardeners or densifiers are suspected or have been utilized. Concrete must have a minimum internal tensile strength of 200 psi when tested in accordance of ASTM C1583. Concrete must have a maximum relative humidity of less than 75% when tested as per ASTM F2170.

MOISTURE VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 75% (using ASTM F2170), Protective Industrial Polymers must be consulted for further specific recommendations.
Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Testing for these prior to application is always recommended. Consult your PIP representative for approved mitigation treatments.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure.
Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Consult your PIP representative for approved mitigation treatments.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the SDS (Safety Data Sheet)**
- **Jiffy® Mixer Blade**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼ inch nap**
- **Application Squeegee**
-

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.
Mechanical Preparation: Shot Blasting or grinding the surface is the preferred method of preparation. The success of industrial diamond grinding as a concrete preparation method will vary depending on technique and the hardness of the concrete.

JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

MIXING: Use a Jiffy®ES mix blade attached to a slow speed drill.
The color pack should be added slowly with the mixer running first to the **2000-B** (Part B) and mixed thoroughly until color is uniform throughout the container prior to adding the **2000-A** Part A. Add **2000-A** (Part A) and mix all components together for 2-3 minutes.
Product may be thinned with Xylene or S-1 solvent with a maximum addition of 8 ounces per mixed gallon of the **PIP 2000 UR**. Never use an alcohol solvent to thin a Protective Industrial Polymers urethane coating. Please consult Protective Industrial Polymers for additional thinning recommendations.

Optional **GlossGrip** or **DiamondWear** should be added after the Part A, Part B and color is mixed.

APPLICATION

DO NOT SPRAY!!

Prior to coating, the floor must be completely free of fine dust and minute debris. It is best to mechanically wash, rinse and finally damp wipe the floor with clean towels and water. It is also recommended to rid roller of initial loose nap by wetting and painting a small scrap piece of plastic sheeting or cardboard prior to using on the floor.
Atmospheric Relative Humidity above 50%, regardless of temperature, has a dramatic effect on reducing the workable wet edge tie-in time relating to consistent color development of PIP 2000 or PIP 2100 series urethanes. Temperatures above 75F have the same impact. When encountering either of these situations or a combination of both, it is imperative to mix, apply, and finish roll the coating within 10 minutes. Exceeding this time may present roller marks or dark edge lines. Plan your application pattern ahead of time so that these wet tie-in times can be met as practically possible.

SMOOTH GLOSS APPLICATION

Technical Data Sheet

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Pour entire mix as quickly as possible to the floor. Quickly spread material uniformly using a notched squeegee over the floor. Then level by back-rolling with a 3/8"-3/16 inch nap non-shedding roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air into the surface. Applying the material too thin (less than 6 mils) may result in poor leveling, may exhibit a slight orange peel finish and not sufficiently hide small dust, dirt and roller lint commonly encountered and exacerbated on high gloss floors. The best practice is to measure and grid the floor to be sure of the proper application rate.

TEXTURED APPLICATION Apply **PIP 2000 UR** containing **GlossGrip #10** to the floor surface utilizing a roller pan and roller. Do not squeegee as it will be very difficult to remove the squeegee lines. It is best to place a screen at the bottom of the pan to prevent the roller from picking up settled aggregate at the bottom of the pan. Roll often so as to expose aggregate uniformly. Material applied excessively heavy (greater than 3.5 mils) will exhibit irregular texture, may blister or gas and can be soft during curing. Applying the material too thin will result in a non-uniform gloss. The best practice is to measure and grid the floor to be sure of the proper application rate.

CURING (DRYING): The cure time of PIP 2000 UR is greatly dependent on both temperature and relative humidity. At 70-75 degrees F and 35% RH, PIP 2000 UR should be tack free and light foot traffic or recoat ready after 6-8 hours of cure. Allow the coating to cure (dry) for a minimum 24 hours before vehicular traffic. Final physical and chemical resistance properties are achieved at 7-10 days. Allow for longer cure times at lower temperatures and low humidity.

PIP 2000-2100-Series Spike can be added to decrease the curing time of PIP 2000 UR. Below are approximate guidelines to use for additions of PIP 2000-2100-Series Spike. Jobsite conditions other than which are listed may also affect curing profile. Use only as a general guideline.

Cure Profile (72F and 35% RH) PIP 2000

Standard product (Tack free, light foot traffic ready)	6-8 hrs.
2 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	4.5-5.5 hrs.
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	3.5-4.5 hrs.

Cure Profile (60F and 35% RH) PIP 2000

Standard product (Tack free, light foot traffic ready)	10-12 hrs
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	8 hrs
6 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	6 hrs

Cure Profile (90F and 60% RH) PIP 2000

Standard product (Tack free, light foot traffic ready)	3-4 hrs
2 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	1.5-2 hrs.
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	Not recommended
6 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	Not recommended

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).
CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

Technical Data Sheet

PIP 2000 UR

Low-Odor, High Solids, High-Gloss Pigmented Urethane System

PROTECTIVE INDUSTRIAL POLYMERS
7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

WARRANTY AND CONDITIONS OF USAGE

WARRANTY AND LIMITATION OF LIABILITY: Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

Protective & Marine Coatings

RESUFLOR™ AQUA 3477
EPOXY WATER EMULSION PRIMER/SEALER

PART A GP3477
PART B GP3477B01
SERIES HARDENER

Revised: March 3, 2021

PRODUCT INFORMATION

PRODUCT DESCRIPTION

RESUFLOR AQUA 3477 Epoxy Water Emulsion Primer/Sealer is an economical sealer for concrete that will outperform water-based acrylic or acrylic/urethane sealers (chemical resistance and wear). Its low viscosity allows Resuflor Aqua 3477 to flow smoothly, making it easy to spread. Resuflor Aqua 3477 is suitable for applications as a primer on damp concrete, providing excellent adhesion of polyurethane and epoxy topcoats.

ADVANTAGES

- Penetrating
- Acceptable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (confirm acceptance of specific part numbers with your Sherwin-Williams representative)
- Can be applied to green concrete
- Excellent adhesion to concrete or wood
- Breathable
- Long pot life
- Reduces concrete dusting
- Easy to spread
- Suitable for use on damp (not wet) concrete
- Fast cure time

TYPICAL USES

RESUFLOR AQUA 3477 Epoxy Water Emulsion Primer/Sealer is used as a sealer for concrete and wood substrates and as a primer for certain Sherwin-Williams coating systems.

LIMITATIONS

- Substrate must be structurally sound and free of bond inhibiting contaminants.
- During installation and initial cure cycle substrate and ambient air temperature must be at a minimum of 50ºF (10ºC). Substrate temperature must be least 5ºF (3ºC) above the dew point for lower temperature installation.
- When required, adequate ventilation and proper clothing shall be provided.
- Strictly adhere to published coverage rates.

SURFACE PREPARATION

Proper inspection and preparation of the substrate to receive resinous material is critical. Read and follow the "Instructions for Concrete Surface Preparation" (Form G-1) for complete details.

PRODUCT CHARACTERISTICS

Color:	Clear
Mix Ratio:	2:1
Volume Solids:	31% ± 2%, mixed
Weight Solids:	31% ± 2%, mixed
VOC (EPA Method 24):	Unreduced: <100 g/L mixed; 0.83 lb/gal as applied
Viscosity, mixed:	40 cps

Recommended Spreading Rate per coat:

	Minimum		Maximum	
Wet mils (microns):	**2**	(50)	**4.5**	(113)
~Coverage sq ft/gal (m^2/L):	**800**	(20.3)	**350**	(8.9)

Drying Schedule @ 4.5 mils (113 microns) wet:

	@ 73°F (23ºC)
To touch:	1-4 hours
To recoat:	2-24 hours

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Pot Life: gallon mass 6-8 hours @ 73°F (23ºC)

Shelf Life:	Part A: 12 months, unopened Part B: 12 months, unopened Do not allow material to freeze. Store indoors at 50°F (10°C) to 90°F (32°C).
Flash Point:	>200°F (>93°C), ASTM D 93, mixed

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Adhesion to Concrete		Excellent
Resistance to Moisture		Excellent
Surface Burning*	ASTME84/ NFPA 255	Flame Spread Index 20; Smoke Development Index 90
Thermal Shock		Excellent

***Resuflor Aqua 3477 at 1.5 mils (40 microns) DFT topcoated with Resuflor 3746 at 17.5 mils (438 microns) DFT**

Protective & Marine Coatings

RESUFLOR™ AQUA 3477
EPOXY WATER EMULSION PRIMER/SEALER

PART A GP3477
PART B GP3477B01
SERIES HARDENER

Revised: March 3, 2021

PRODUCT INFORMATION

APPLICATION

APPLICATION INSTRUCTIONS:

1. Premix GP3477A (resin), using a low speed drill and Jiffy blade. Mix for one minute and until uniform, exercising caution not to whip air into the materials.

2. Add 2 parts GP3477A (resin) to 1 part 3477B (hardener) by volume. Mix with low speed drill and Jiffy blade for three minutes and until uniform. DO NOT mix more material than can be used within 4 hours.

3. Apply material with a 3/8" nap roller at a spread rate of 400 sq. ft. per gallon.

If a second coat is required or used as a sealer, the aplcation rate should be 500-600 sq. ft. per gallon. Due to the first coat sealing the surface, the second coat may crawl of or separate, wait 15-20 minutes and roll again.

DO NOT ALLOW TO PUDDLE. Any uneven or textured surfaces will require more material than an even surface.

4. Allow to cure 4-6 hours.

ORDERING INFORMATION

Packaging:
- Part A: 1 gallon (3.8L) and 5 gallon (18.9L) containers
- Part B: 1 gallon (3.8L) and 5 gallon (18.9L) containers

Weight: 8.7 ± 0.2 lb/gal; 1.04 Kg/L mixed, may vary by color

TINTING

Do not tint.

CLEANUP

Clean up mixing and application equipment immediately after use with soap and water.

SAFETY

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

MAINTENANCE

Occasional inspection of the installed material and spot repair can prolong system life. For specific information, contact contact your Sherwin-Williams Representative.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

PRODUCT DATA SHEET

95 Goodwin Street
East Hartford, CT 06108

Tel: 800-253-3539 • Fax: 860-528-2802 • www.dur-a-flex.com • contact_us@dur-a-flex.com

POLY-CRETE MD

DESCRIPTION

POLY-CRETE MD is a 100% solids, aromatic, cementitious urethane system blended with graded silica and fine fillers applied at 3/16 to 1/4 inch to produce a self-leveling matte finish of uniform color.

BENEFITS

- VOC Compliant
- CA 01350 Indoor Air Quality Compliant
- ADA Compliant
- Leed Credits Available
- Meets USDA, FDA , and CFIA Standards
- Superior Adhesion
- Superior Chemical Resistance
- Will not support bacteria growth
- Easy Maintenance
- Wide Service Temperature, -100 to 220oF
- No Topcoat Required
- Can Be applied To 7-14 Day Old Concrete
- Withstands moisture levels up to 20 lbs./1000 sq.ft./24 hours and up to 99% RH.

LIMITATIONS

Do not apply at a temperature below 60°F (10°c) or above 85°F (29°c). POLY-CRETE MD can be slippery when oily. Do not apply to un-reinforced sand cement screeds, asphalt or bitumen substrates, glazed tile or nonporous brick and tile, magnesite, copper, aluminum, polyesters or elastomeric membranes.

TYPICAL USES

POLY-CRETE MD is designed to protect concrete, polymer reinforced screeds, or water resistant plywood from chemical attack, corrosion impact and thermal shock. Repeated exposure to hot oil or steam does not cause pitting, cracking or crazing.

- Chemical Processing
- Food Processing Areas
- Cook / Chill Areas
- Bakeries
- Plant Vehicle Aisles
- Warehouses
- Bottling Areas
- Sanitize / Wash Areas
- Pharmaceutical
- Cage Wash Areas
- Mfg/Production Areas

COLORS

Refer to Poly-Crete MD Color Selector Guide. Special color matches may be available

PACKAGING/STORAGE

POLY-CRETE MD is available in pre-measured kits that cover 32 square feet at 3/16 inch. POLY-CRETE MD must be stored dry. Do not use partial bags of aggregate. Do not allow resins to freeze. Every POLY-CRETE product will be shipped with a lot number on the label. The first two digits indicate the year; the second two show the month, the third two will be the day. The shelf life is 6 months from the date on the label in the original unopened container.

SURFACE PREPARATION

This product requires preparation in order to perform as expected. Surface must be profiled, clean, dry, oil free and sound. It is recommended that the perimeter edges of the floor area and doorways be keyed to produce a cross section ¼ inch deep by ¼ inch wide running at 6 inches away from and parallel to doorways, drains and walls. Please refer to the master Surface Preparation Guide on our website for more information.

APPLICATION METHOD /SPREAD RATES

POLY-CRETE MD should be applied to a preprimed area at the required thickness by using a steel bladed trowel, pin rake, “V” notched trowel or cam rake. The freshly placed material is then spiked rolled. As an option, a coat of POLY-CRETE COLOR-FAST can be applied to prevent ambering.

DRAWINGS AND DETAILS

Standard CAD drawings and details are available for coves, drains, breaches, transitions, etc. Please refer to the master Drawings and Details guide for actual drawings.

JOINT GUIDELINES

Refer to the Joint Guidelines for complete details on our website.

MOISTURE CONCERNS

Normal limits for moisture vapor transmission for Poly-Crete floor systems are 20 lbs./1,000 sq. ft./24 hour using the calcium chloride test per ASTM F-1869 or 99% relative humidity using in-situ Relative Humidity Testing per ASTM F-2170. Please refer to the Floor Evaluation Guidelines at www.dur-a-flex.com for complete details.

CHEMICAL RESISTANCE

POLY-CRETE MD has excellent resistance to organic and inorganic acids, alkalis, fuel and hydraulic oils, aromatic and aliphatic solvents. Some acids may discolor or bleach the surface.

CLEANING

Regular scrubbing will maintain these systems in serviceable condition as long as contamination is not allowed to build. However, certain textures and service environments require specific procedures. Please refer to the master Cleaning Guide on our website for more information.

POLY-CRETE MD TECHNICAL INFORMATION		
Cure Time @ 70°F Light Traffic		10 hours
Light Wheel Traffic		16 hours
Heavy Duty Traffic		48 Hours
Full Service		5 days
Color		Refer to Poly-Crete MD Color Selector Chart
Mix Ratio (by volume)		3 Component kit
Working time @ 70°F		15 minutes
Adhesion to Concrete		> 400 psi, concrete fails before loss of bond
Service Temperature		-100°F to 220°F (live stream)
Physical Property	**Test Method**	**Result**
Hardness (Shore D)	ASTM D-2240	85
Compressive Strength	ASTM C-579	8,990 psi
Tensile Strength	ASTM D-638 ASTM C-307	2,175 psi 1,000 psi
Impact Resistance @ 125 mils	MIL D-3134	>160 in-lb
Flexural Strength	ASTM D-790 ASTM C-580	5,075 psi 2,400 psi
Abrasion Resistance CS-17 Wheel 1000 GM Load 1,000 Cycles	ASTM D-4060	50 mg loss
Static Coefficient of Friction	ASTM D-2047	>0.6
VOC Content		0 g/L
Indoor Air Quality		Compliant to CA 01350 - CDPH v1.1-2010

IMPORTANT!

Before using DUR-A-FLEX products, read and understand its accompanying Safety Data Sheet & Application Instructions for important safety information.

STANDARD TERMS AND CONDITIONS OF SALE, INCLUDING STANDARD WARRANTY APPLY - VISIT **DUR-A-FLEX.COM** FOR THE LATEST VERSION

SHERWIN WILLIAMS | HIGH PERFORMANCE FLOORING

RESUTILE™ HPS 100
GLOSS URETHANE TOPCOAT

PART A GP4641A01 — **CLEAR**
PART B GP4641B01 — **HARDENER**

Revised: March 29, 2023

PRODUCT INFORMATION

PRODUCT DESCRIPTION

RESUTILE HPS 100 is a clear, high solids, two-component, aliphatic, moisture-cure urethane applied over an epoxy primer or used to recoat an existing epoxy or urethane floor.

Advantages:
- LEED® v4 – Indoor Air Quality credits available - meets requirements per CDPH-CA Section 01350 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental chambers Version 1.2.
- Designed to withstand industrial traffic
- Light stable, high-gloss finish provides superior light reflectivity
- Resists Skydrol®, jet fuels and other industrial chemicals
- Low VOC (7 g/L). (Complies with SCAQMD VOC regulations.)

TYPICAL USES

- Hangar floor
- Automotive manufacturing
- Mechanical room
- Assembly / Production
- Packaging
- Clean room / lab

GENERAL INFORMATION

Use colorants at a rate of one unit per 1-gallon (3.78 litres) of Resutile HPS 100. Standard colorants: White, Yellow and Sandy Beige will not impart total hide. Similar colorants also may not hide as well.

LIMITATIONS:
Contamination (Fisheyes): Product may fisheye if oil, silicones, mold release agents or other contaminants are present.

Chemical Resistance / Staining: Reduced chemical resistance and staining is possible in pigmented versions of the system.

ORDERING INFORMATION

Packaging: Part A: 1.48 gallons (5.6L) in a 5 gallon (18.9L) pail
Part B: 0.40 gallons (1.5L) in a half-gallon (1.9L) container

PRODUCT CHARACTERISTICS

Color:	Clear
Mix Ratio:	1:1 by unit
Volume Solids:	91.60%, mixed (ASTM D2369)
Weight Solids:	91.34%, mixed (ASTM D2369)
VOC (ASTM D3960):	7 g/L ; 0.06 lb/gal

Recommended Spreading Rate per coat:

	Minimum		Maximum	
Wet mils (microns)	**3.2**	(80)	**3.2**	(80)
Dry mils (microns)	**2.9**	(73)	**2.9**	(73)
~Coverage sq ft/gal (m^2/L):	**500**	(12.3)	**500**	(12.3)

Drying Schedule:

	@ 60°F/16°C 20% RH	@ 60°F/16°C 80% RH	@ 75°F/24°C 13% RH	@ 90°F/32°C 20% RH	@ 90°F/32°C 80% RH
Tack Free:	12-16 hours	12-16 hours	6.5 hours	3.5 hours	1.5 hours
Foot Traffic:	24 hours	24 hours	24 hours	24 hours	24 hours

Recoat Window: Maximum: Up to 24 hours for all conditions

Shelf Life: 12 months, unopened
Store indoors at 65°F (18°C) to 90°F (32°C)

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results*
Abrasion Resistance	ASTM D4060, CS-17 wheel, 1000gm load, 1000 cycles	14.9 mg loss
Coefficient of Friction	ASTM D2047	0.61
Elongation	ASTM D2370	6%
Flammability	ASTM D635	182 mm/min
Koenig Hardness, 3 Mil Film (resin only)	ASTM D4366	171.3
Tensile Strength	ASTM D2370	6,250 psi
Water Absorption, 24-hour immersion	ASTM D570	1.81%
Wet Static Coefficient of Friction, BOT 3000	ANSI/NFSI B101.1	0.99

*results are based on conditions at 77°F (25°C)

SHERWIN WILLIAMS. | HIGH PERFORMANCE FLOORING

RESUTILE™ HPS 100
GLOSS URETHANE TOPCOAT

PART A	GP4641A01	CLEAR
PART B	GP4641B01	HARDENER

Revised: March 29, 2023

PRODUCT INFORMATION

SURFACE PREPARATION

CHECK THE TEMPERATURE AND HUMIDITY: Floor temperature and materials should be between 65°F (18°C) and 90°F (32°C). Humidity must be less than 80%. DO NOT coat unless floor temperature is more than five degrees over the current, local dew point.

CHECK FOR MOISTURE: Concrete must be dry before application of this floor coating material. Concrete moisture testing must occur. In-situ relative humidity testing is recommended. Readings must be below 75% relative internal concrete humidity. Test methods can be purchased at www.astm.org, see F2170, or follow manufacturer's instructions. If moisture issues are present, the use of a moisture mitigation system may be a consideration. Consult your Sherwin-Williams representative for further information / instructions.

NOTE: Although moisture testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly and/or you suspect you may have concrete contamination. Additional testing may be necessary to determine the vapor barrier and any contamination.

APPLICATION EQUIPMENT

- Protective clothing
- Jiffy® mixer blade
- Application tray
- Disc machine
- Roller assembly (18")
- Medium (3/8") nap roller
- 100 grit sandpaper
- Slow speed drill (500 rpm or less)

ASSEMBLE EQUIPMENT: Due to the limited pot life of the material, all application equipment, etc. should be ready for immediate use. (Clean roller with tape to remove any residual lint.)

APPLICATION INSTRUCTIONS

Recoat: Resutile HPS 100 may be used to coat over an existing epoxy or urethane in sound condition. Detergent scrub and rinse with clean water to remove surface dirt, grease, oil and contaminants. Floor must be sanded thoroughly with 100 grit paper prior to recoating. The use of more aggressive paper will introduce deep grooves that will not be covered by a single, thin coat of urethane; swirl marks will be particularly evident if the topcoat is glossy. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating.

Resutile HPS 100 must be applied over a Sherwin-Williams' 100% solids epoxy primer. Epoxy must be thoroughly sanded and cleaned prior to application of Resutile HPS 100.

Premix Part A for 3 minutes using a Jiffy mixer blade with slow speed drill. Pot Life: Mix only enough material which can be used in a two-hour period. Note: Once opened, this material cannot be resealed for later use.

Colors: Premix Sherwin-Williams colorants before adding to Resutile HPS 100 to ensure uniform color. Add colorant to Resutile HPS 100 Part A.

Add Part B while mixing. Mix for 3 minutes using a Jiffy mixer blade and slow speed drill. Pour into application tray.

Apply Resutile HPS 100 at the rate of 500 sq. ft./gallon (46.45 m2/3.78 litres) with a 3/8" nap roller. For proper appearance and development of physical properties, it is crucial that material is not applied above or below this rate. Dip the roller in the coating and lightly roll out excess in the application tray. Apply two 8-10 foot (2.4-3.0 meters) long paths on the concrete, making one stroke left to right and one right to left. Rewet the roller and apply two more paths adjacent to the first pair. Rewet roller and apply a third pair adjacent to the second.

Spread the material evenly with V-shaped cross passes.

Make sure the floor has just enough coating to cover evenly. Excess material could cause the floor to blister, especially in high humidity. Insufficient material will cause the floor to look non-uniform.

Level the area with straight passes that cross the initial material paths. These final strokes will reduce roller marks. If the appearance is not satisfactory, reroll the area.

Allow coating to dry 24 hours at 75°F (24°C), 50% relative humidity before opening to light traffic. Allow more time at low temperatures, low humidity or for heavier traffic. Full coating properties take 14 days to develop.

SHERWIN WILLIAMS | HIGH PERFORMANCE FLOORING

RESUTILE™ HPS 100
GLOSS URETHANE TOPCOAT

PART A GP4641A01 — **CLEAR**
PART B GP4641B01 — **HARDENER**

Revised: March 29, 2023

PRODUCT INFORMATION

CHEMICAL RESISTANCE

Reagent	1 Day	7 Days
Hydrochloric Acid 10%	E	E
Hydrochloric Acid 30% (Muriatic)	E	E
Nitric Acid 10%	G	P
Phosphoric Acid 50%	G	G
Sulfuric Acid 37% (Battery Acid)	E	G
Acetic Acid 10%	E	E
Citric Acid 10%	E	E
Oleic Acid	E	E
Ammonia Hydroxide 10%	E	E
Sodium Hydroxide 50%	E	E
Ethylene Glycol (Antifreeze)	E	E
Isopropyl Alcohol	G	G
Methanol	G	F
D-Limonene	E	E
JP-4 Jet Fuel	E	E
Gasoline	E	E
Mineral Spirits	E	E
Xylene	E	E
Methylene Chloride	P	P
MEK	F	F
PMA	E	G
Ammonium Nitrate 20%	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil (SAE 30)	E	E
Skydrol® 500B	E	E
Skydrol® LD4	E	E
Sodium Chloride 20%	E	E
1% Tide® Laundry Soap	E	E
10% Trisodium Phosphate	E	E
Coffee	E	E
Coke®	E	E
Ketchup	E	E
Mustard	G*	G*
Red Wine	E	G*
3M™ DuraPrep™	G*	F
Purdue Betadine Solution	G*	G*

ASTM D1308 Test Method 3.1.1 spot test, covered. Results are based on 1-day and 7-day. Coating cured 2 weeks prior to testing.

E - Excellent (no adverse effect) - Recommended
G - Good (limited adverse effect) - Use for short-term exposure only
F - Fair (moderate adverse effect) - Not recommended
P - Poor (unsatisfactory) - Little or no resistance to chemical

*only adverse effect was staining

NOTE: Reduced chemical resistance and staining is possible in pigmented versions of the system

MAINTENANCE

Allow floor coating to cure at least one week before cleaning by mechanical means (e.g., sweeper, scrubber, disc machine).

Care: Proper maintenance will increase the life and help maintain the appearance of your new Sherwin-Williams floor coating. Sweep and scrub your new coating regularly, as dirt and dust are abrasive and can quickly dull the finish, decreasing the life of your coating. Remove spills quickly as certain chemicals may stain and could possibly permanently damage the finish. Use soft nylon brushes or white pads on your new floor coating. Any brush more abrasive than a soft nylon or white pad can cause premature loss of gloss.

Caution: Avoid scratching or gouging the surface. All floor coatings will scratch if heavy objects are dragged across the surface. Do not drop heavy or pointed items on the floor as this may causing chipping or concrete popouts in the case of a weak cap. Rubber tires can permanently stain the floor coating from plasticizer migration. Plexiglass® between the tire and the floor coating can prevent discoloration. Rubber burns from quick stops and starts can heat the coating to its softening temperature, causing permanent marking.

Repair: Repair gouges or scratches or chip outs as soon as possible to prevent moisture or chemical contamination.

TINTING

Only tint with HPF Universal Colorants. Do not tint with GIS colorants. Use two pints of colorant per ~1.88 gallon mix of Parts A and B.

Standard colorants: White, Bright Yellow, Rotunda Red and Sandy Beige will not impart total hide. Similar colorants also may not hide as well.

SAFETY

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Technical Data Sheet

PIP 1000 HC

High-Clarity, Low Yellowing Clear Epoxy Coating System

PROTECTIVE INDUSTRIAL POLYMERS

7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:

PIP 1000 HC is a clear, two-component, 100% solids, epoxy resin coating system specifically formulated for clear top coats over pigmented or decorative flooring systems. It is formulated with near water white transparent resins and hardeners rendering a coating which highlights the coating or system beneath it. This product produces a gloss finish.

USES:

Used primarily as a final or intermediate clear sealer.

ADVANTAGES:

- Faster cure versus traditional low yellowing epoxy coatings.
- Extremely low odor
- High build application
- Excellent impact and abrasion resistance
- Resists staining from cleaning and industrial chemicals
- Complies with VOC regulations for industrial maintenance coatings in the OTC and CA*.
  (*excluding SCAQMD when thinned to maximum)

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:

3.0 Gallon Clear Kit:
1000 HC-A/2SF
1000 HC-B/1
15.0 Gallon Clear Kit:
1000 HC-A/5 (2 ea.)
1000 HC-B/5
153.0 Gallon Clear Kit:
1000 HC-A/55 (2 ea.)
1000 HC-B/55

LIMITATIONS:

Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, resin systems may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED. Please contact Technical Service for additional recommendations. **PIP 1000 HC** may amber slightly over time from UV exposure. Top coating with PIP 2100 UV aliphatic urethane will greatly enhance UV stability.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥215 °F (102°C)
Volume Solids (mixed)	ASTM D2369	100 %
Mixed Viscosity	ASTM D2196	500-700 cPs
Dry Time	ASTM D5895	Tack Free 7-9hr Full Cure 7 days
VOC-Volatile Organic Compound	ASTM D3960	0 g/l clear

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	80 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/NS-36)
Tensile Strength	ASTM D2370	10,500 psi
Adhesion to Concrete	ASTM D4541	350 psi concrete failure
Impact	ASTM D2794	60 in.lbs Direct & Reverse
Hardness (Shore D) Hardness (Pencil)	ASTM 2240 ASTM D3363	85-90 2H
Dry Film Thickness	at 15 mils WFT	15 mils
Water Absorption	ASTM C413	<0.5%
Flame Spread	ASTM E84	Class A
Flammability Rating	ASTM E648	Class 1
Flammability	ASTM D635	Self Extinguishing

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

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CHEMICAL RESISTANCE*: Consult Protective Industrial Polymers for specific requirements.

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

SUBSTRATE: The concrete substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. Do not coat if concrete contains Type III Portland Cement. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if Sodium or Potassium metasilicate hardeners or densifiers are suspected or have been utilized. Concrete must have a minimum internal tensile strength of 200 psi when tested in accordance of ASTM C1583. Concrete must have a maximum relative humidity of less than 75% when tested as per ASTM F2170.

MOISTURE VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 75% (using ASTM F2170), Protective Industrial Polymers must be consulted for further specific recommendations.
Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Testing for these prior to application is always recommended. Consult your PIP representative for approved mitigation treatments.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.
vapor barrier is inadequate, there is an elevated risk of bond failure. Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Consult your PIP representative for approved mitigation treatments.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the SDS (Safety Data Sheet)**
- **Jiffy® Mixer Blade model ES**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼-3/8 inch nap**
- **Application Squeegee**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.

JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

MIXING: *In bulk packaging containers such as 5-gallon containers and drums, pre-mix the Part A prior to in field metering.*
Mix ratio is 2 Part A to 1 part B by volume. Mix both components together for 2-3 minutes with a Jiffy® ES mix blade attached to a slow speed drill. Mix only enough material at one time that can be applied without exceeding the pot life. ***Note:*** Once this material is mixed, it can't be resealed for later use.

APPLICATION:

***APPLY* PIP 1000 HC** to the floor surface using a notched or flat squeegee depending on desired thickness. Leaving the material sit in the pail longer than 5 minutes will result in an increase of viscosity and reduce leveling properties. Back roll and evenly spread the wet coating using a ¼-3/16" inch nap non-shed roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air to the surface.

RECOMMENDED APPLICATION RATE:
10-20 mils

CURING (DRYING): Allow the coating to cure (dry) for a minimum 24 hours after application at 75°F (24°C) and 50% RH before opening the floor to light traffic, allow more time for low temperatures and higher humidity or for heavier traffic. Full coating properties may take up to 7 days to develop.

***RECOAT:* PIP 1000 HC** can be top coated with other PIP urethanes or epoxies within 24 hours at 70-75F 30% RH without sanding or may be used as a topcoat over existing (sound) PIP epoxy coatings. If the re-coat window has expired, the prior cured coating surface must be sanded with 100 grit sand paper or sanding screen installed on a swing-type floor buffer. Sand to a uniform dulled surface. Remove all sanding debris with a vacuum and damp mop. Scrub with detergent and rinse with clean water. Surface must be dry before coating.

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

DISPOSAL: Dispose in accordance with federal, state, and local regulations.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

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MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).

CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

WARRANTY AND CONDITIONS OF USAGE

WARRANTY AND LIMITATION OF LIABILITY: Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

Technical Data Sheet

PIP 2100 UR-Gloss

UV-Blocking, Low Odor, High Solids, Clear Aliphatic Gloss Urethane

PROTECTIVE INDUSTRIAL POLYMERS

7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:

PIP 2100 UR-Gloss is a high-solids, two part, aliphatic clear polyurethane coating. **PIP 2100 UR-Gloss** is formulated to greatly reduce damaging UV rays from penetrating and yellowing an epoxy basecoat. **PIP 2100 UR-Gloss** is recommended as the clear finishing coat on decorative flake, quartz or metallic pigmented flooring systems.

Added abrasion resistance may be obtained with the optional **DiamondWear** additive or **GlossGrip** #10 additive. Addition of the **DiamondWear** Additive will result in a satin finish whereas the addition of **GlossGrip** #10 will maintain gloss and exhibit slight skid resistance and easily cleaned finish.

USES: Suited for higher profile decorative mezzanines, show room floors, or laboratories and places where physical and chemical resistance combined with light stability are important. Addition of the **DiamondWear** or **GlossGrip** #10 makes the coating ideal for entrance ways where a slight skid resistance floor and decorative floor is desired.

ADVANTAGES:

- Contains UV blockers and absorbers which protect and minimize epoxy basecoats from yellowing
- High-gloss finish provides UV stable, light reflectivity
- Excellent resistance to tire staining (hot or cold)
- Resists Skydrol®, jet fuels and other chemicals
- Withstands industrial traffic with wear additive
- Two times floor life compared to standard urethanes
- Four times floor life compared to most epoxies
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC & CA* (*excluding SCAQMD)

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:
Volume Mix Ratio: .5A : 2B

1.25 gallon PIP 2100 UR-Gloss Clear
Smooth Texture (334 SF @ 6 mils)
2100-A/Q
2100-B/1

2.50 gallons PIP 2100 UR-Gloss Clear
(668 SF @ 6 mils)
2100-A/HG
2100-B/2

2.50 gallons PIP 2100 UR-Gloss Clear with Gloss Grip
(1146 SF @ 3.5 mils)
2100-A/HG
2100-B/2
GlossGrip #10/P

2.88 gallons PIP 2100 UR-Gloss Clear
Diamond Wear Texture (1320 SF @ 3.5 mils)
2100- A/HG
2100-B/2
DiamondWear/HG

Texture: GlossGrip #10 Additive can be incorporated into PIP 2100 UR-Gloss to create a wear texture while maintaining an easily cleaned glossy surface.
DiamondWear Additive can be incorporated into **PIP 2100 UR-Gloss** to create a satin finish high wear surface.

For applications where the temperatures are between 55°F-65°F combined with relative humidity levels (RH) between 20-35%, the use of **PIP 2000-2100-Series Spike** accelerator is recommended. Use of this accelerator will hasten the cure to be similar of the standard material in normal conditions (70-80F with 35-80% RH). The use of this accelerator in normal conditions will result in a shorter working time, higher viscosity build, reduced leveling and increases stickiness and roller drag. When relative humidity (RH) is below 20%, please consult Protective Industrial Polymers for specific recommendations and limitations.

See PIP 2000-2100-Series Spike Technical Data Sheet for more detailed information regarding the use of this accelerator.

LIMITATIONS:

Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, **PIP 2100 UR-Gloss** may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED; please contact Technical Service for additional recommendations.

DO NOT APPLY PIP 2100 DIRECT TO PIP 1300 MVR. ALWAYS APPLY ANOTHER PIP EPOXY PRODUCT SUCH AS PIP 1000 SERIES COATINGS ON TOP OF THE PIP 1300 MVR BEFORE APPLYING THE PIP 2100 URETHANE.

Vivid Colors: Although PIP 2100 is not typically used in conjunction with a color pack, (pigmented urethane topcoat), on occasion a contractor or applicator may choose to do so. In these cases, it must be realized that certain vivid colors especially in the blue and green family require a special Part B; 2000-B VIVID if a high gloss finish is desired. Failure to utilize 2000-B Vivid will result in a dull irregular sheen. Colors affected are:

1. CPU-26 Hyper Blue
2. CPU-31- Cat Green
3. CPU-61- Deep Blue
4. CPU-75- Regal Blue
5. CPU-142 Blue Gray
6. CPU-305-NSK Green
7. CPU-350 Safety Red
8. CPU-357 Magnum Green
9. CPU-374 Dirty Blue
10. CPU-450- Safety Blue
11. CPU-514- Paradise Green
12. CPU-526- Aisle Green
13. CPU-589- Grass Green
14. CPU-945 Pantone
15. CPU -2935 Lazer Blue (RAL)

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16. CPU-2945 Signal Blue (RAL
17. CPU-6018 Green

Consult Protective Industrial Polymers for updates to this list of colors if uncertain as to the use of the 2000 VIVID product.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	187 °F (86°C)
Volume Solids (mixed)	ASTM D2369	85-90%
Mixed Viscosity	ASTM D2196	400 cPs
Dry Time	ASTM D5895	Tack Free 6 hr Dry 12-16 hr Full Cure 7-14 days
VOC-Volatile Organic Compound	ASTM D3960	< 175 g/l Clear & Pigmented

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Taber CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	25 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/GlossGrip #10
Tensile Strength	ASTM D2370	2300 psi
Elongation	ASTM D2370	5%
Impact	ASTM D2794	140 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	3H
Dry Film Thickness	at 4 mils WFT	3.5 mils
Flame Spread	ASTM E648	Class 1
Flammability Rating	ASTM E84	Class A

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*:

PIP 2100 UR-Gloss	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	G	G
30% Hydrochloric	G	F
10% Nitric	G	F
50% Phosphoric	G	F
37% Sulfuric	F	P
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	G	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	G	G
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	E	E
Mineral Spirits	E	E
Xylene	E	E
Methylene Chloride	P	P
MEK	G	G
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E
20% Sodium Chloride	E	E
10% TSP	E	E

*Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.

Legend:
E- Excellent (Not Effected)
G-Good (Limited Negative Effect)
F-Fair (Moderate Negative Effect)
P-Poor (Unsatisfactory)

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INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

PIP 2100 UR must be applied to an epoxy or other approved primer or base coat. Sections below detailing substrate, moisture and vapor/contamination apply to the required conditions of the concrete substrate prior to application of an epoxy primer.

SUBSTRATE: The substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if silicate hardeners or membranes have been utilized.

MOISTURE: Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the PIP 2000 is to be applied direct to the concrete substrate, Protective Industrial Polymers must be consulted.

VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Consult your PIP representative for approved mitigation treatments.
TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the SDS (Safety Data Sheet)**
- **Jiffy® Mixer Blade**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼ inch nap**
- **Application Squeegee**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.
Mechanical Preparation: Shot Blasting or grinding the surface is the preferred method of preparation. The success of industrial diamond grinding as a concrete preparation method will vary depending on technique and the hardness of the concrete.
JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

MIXING: Use a Jiffy®ES mix blade attach to a slow speed drill. Mix only enough material at one time not to exceed the pot life. ***Note:*** Once this material is opened and mixed it can't be resealed for later use.
Add **2100-A** (Part A) to the **2100-B** (Part B) container and mix together for 2 minutes. Product may be thinned with Xylene or S-1 solvent with a maximum addition of 8 ounces per mixed gallon of the **PIP 2100 UR**. Never use an alcohol solvent to thin a Protective Industrial Polymers urethane coating. Please consult Protective Industrial Polymers for additional thinning recommendations.

Optional **GlossGrip** or **DiamondWear** should be added after the Part A, Part B and color is mixed.

APPLICATION

DO NOT SPRAY!!

Prior to coating, the floor must be completely free of fine dust and minute debris. It is best to mechanically wash, rinse and finally damp wipe the floor with clean towels and water. It is also recommended to rid roller of initial loose nap by wetting and painting a small scrap piece of plastic sheeting or cardboard prior to using on the floor.

SMOOTH GLOSS APPLICATION
Pour entire mix as quickly as possible to the floor. Quickly spread material uniformly using a notched squeegee over the floor. Then level by back-rolling with a 3/8"-3/16 inch nap non-shedding roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air into the surface. Applying the material too thin (less than 6 mils) may result in poor leveling, may exhibit a slight orange peel finish and not sufficiently hide small dust, dirt and roller lint commonly encountered and exacerbated on high gloss floors. The best practice is to measure and grid the floor to be sure of the proper application rate.

GLOSSGRIP #10 or DIAMONDWEAR TEXTURED APPLICATION
Apply **PIP 2100 UR-Gloss** containing **GlossGrip** #10 or **DiamondWear** to the floor surface utilizing a roller pan and roller. Do not squeegee as it will be very difficult to remove the squeegee lines. It is best to place a screen at the bottom of the pan to prevent the roller from picking up settled aggregate at the bottom of the pan. Roll often so as to expose aggregate uniformly. Material applied excessively heavy (greater than 3.5 mils) will exhibit irregular texture, may blister or gas and can be soft during curing. Applying the material too thin will result in a non-uniform gloss. The best practice is to measure and grid the floor to be sure of the proper application rate.

CURING (DRYING): The cure time of PIP 2100 UR is greatly dependent on both temperature and relative humidity. At 70-75 degrees F and 35% RH, PIP 2100 UR should be tack free and light foot traffic or recoat ready after 6-8 hours of cure. Allow the coating to cure (dry) for a minimum 24 hours before vehicular

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traffic. Final physical and chemical resistance properties are achieved at 7-10 days. Allow for longer cure times at lower temperatures and low humidity.

PIP 2000-2100-Series Spike can be added to decrease the curing time of PIP 2100 UR. Below are approximate guidelines to use for additions of PIP 2000-2100-Series Spike. Jobsite conditions other than which are listed may also affect curing profile. Use only as a general guideline.

Cure Profile (72F and 35% RH) PIP 2100

Standard product (Tack free, light foot traffic ready)	6-8 hrs.
2 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	4.5-5.5 hrs.
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	3.5-4.5 hrs.

Cure Profile (60F and 35% RH) PIP 2100

Standard product (Tack free, light foot traffic ready)	10-12 hrs
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	8 hrs
6 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	6 hrs

Cure Profile (90F and 60% RH) PIP 2100

Standard product (Tack free, light foot traffic ready)	3-4 hrs
2 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	1.5-2 hrs.
4 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	Not recommended
6 fl. oz. 2000-2100-Series Spike/2.5 gal. mixed	Not recommended

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).

CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing he life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

WARRANTY AND CONDITIONS OF USAGE

WARRANTY AND LIMITATION OF LIABILITY: Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

Technical Data Sheet

PIP 3600 EM

Epoxy Mortar System

PROTECTIVE INDUSTRIAL POLYMERS
7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:

PIP 3600 EM is a four-component, epoxy mortar formulated with a modified amine curing agent specially designed to efficiently wet aggregate, enabling higher aggregate-to-binder ratios, yet producing a very dense, closed surface. **PIP 3600 EM** is easily hand or power troweled at a 3/16" to 1/4" thickness and can be extended with larger aggregates in deep fill applications up to a 4" thickness. It is offered in both a standard "4 bag" mix and an optional "5 bag" mix for pitching filling, sloping and lighter duty, economical applications.

USES:

This system is designed for restoring old or damaged concrete by creating a dense protective layer. Suited for industrial applications where a compacted epoxy mortar is specified.

ADVANTAGES:

- Extremely low odor
- Good chemical resistance
- Seals substrate to create environmental barrier
- Excellent trowel properties
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA.
- LEED MR 4.1 Qualification attainable with partial aggregate substitution with PIP Recycled Glass.

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:

PIP 3600 EM Mortar 9.36 Cu.Ft (5 SINGLE MIXES) 600 SF @ 3/16"
(2) 3600-A/5
(1) 3600-B/5
(10 bags) 3000-Coarse Aggregate (500 lbs.)*
(10 bags) 3000-Fine Aggregate (500 lbs.)
OR
20 bags PIP Trowel Blend single blend Aggregate (1000 lbs.)

** LEED MR 4.1 Qualification attainable with 5 bag substitution (250 lbs.) of PIP Recycled Glass for 4 bags of the 3000-Series Coarse Aggregate.*

PIP 3600 EM Mortar 99.2 Cu.Ft (53 SINGLE MIXES) 6348 SF@ 3/16"
(2) 3600-A/55
(1) 3600-B/55
(106 bags) 3000-Coarse Aggregate (5300 lbs.)*
(106 bags) 3000-Fine Aggregate (5300 lbs.)
OR
212 bags PIP Trowel Blend single blend Aggregate (10600 lbs.)

** LEED MR 4.1 Qualification attainable with 53 bag substitution (2650 lbs.) of PIP Recycled Glass for 53 bags of the 3000-Series Coarse Aggregate.*

OPTIONAL "5 BAG" mix designs for pitching filling, sloping and lighter duty, economical applications.

PIP 3600 EM Mortar 11.7 Cu.Ft (5 SINGLE MIXES) 750 SF@ 3/16"

(2) 3600-A/5
(1) 3600-B/5
(10 bags) 3000-Coarse Aggregate (500 lbs.)*
(15 bags) 3000-Fine Aggregate (750 lbs.)
OR
25 bags PIP Trowel Blend single blend Aggregate (1250 lbs.)

** LEED MR 4.1 Qualification attainable with 5 bag substitution (250 lbs.) of PIP Glass for 5 bags of the 3000-Series Coarse Aggregate.*

PIP 3600 EM Mortar 124 Cu.Ft (53 SINGLE MIXES) 7935 SF@ 3/16"

(2) 3600-A/55
(1) 3600-B/55
(106 bags) 3000-Coarse Aggregate (5300 lbs.)*
(159 bags) 3000-Fine Aggregate (7950 lbs.)
OR
265 bags PIP Trowel Blend single blend Aggregate (13250 lbs.)

** LEED MR 4.1 Qualification attainable with 53 bag substitution (2650 lbs.) of PIP Recycled Glass for 53 bags of the 3000-Series Coarse Aggregate.*

OPTIONS:

Product may be tinted when desired with the use of a PIP CPU colorpack. Recommended use is 1 pint of CPU color pack per 4 or 5 bag mix:

LIMITATIONS:

Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, resin systems may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED; please contact Protective Industrial Polymers' technical service for additional recommendations. **PIP 3600 EM** will amber over time from UV exposure. Top coating with an aliphatic urethane will provide UV stability.

Technical Data Sheet

PIP 3600 EM

Epoxy Mortar System

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MATERIAL PROPERTIES*: Based on 4 bag mix

Properties	Test Method	Results
Flash Point	ASTM D3278	≥215 °F (102°C)
Volume Solids (mixed)	ASTM D2369	100 %
Mixed Viscosity (resin only)	ASTM D2196	500 cPs
Dry Time	ASTM D5895	Tack Free 6-8 hr Dry 8-12 hr Full Cure 7 days
VOC-Volatile Organic Compound	ASTM D3960	0 g/l clear ≤50 g/l with pigment pack

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance TaborH10,mgLoss/1000 cycles/1000g mass	ASTM D4060	400 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/NS-36)
Compressive Strength	ASTM C579A	12,000 psi
Compressive Strength	ASTM D695	11,500 psi
Modulus psi	ASTM D695	$2.6x10^5$ psi
Adhesion to Concrete	ASTM D4541	400 psi concrete failure
Impact	ASTM D2794	13in.lbs Direct & Reverse
Modulus of Elasticity	ASTM C580	$1.9x10^6$ psi
Minimum Applied Thickness		1/8”
Tensile Strength	ASTM C-307 (2000psi)	2100 psi
Impact Resistance	MIL-D-3134	<1/16”perm. Indentation; no chipping
Flammability	ASTM D635	Self-Extinguishing
Hardness	ASTM D2240 Shore D	>90

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*:

PIP 3600 EM Binder Clear	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	E	E
30% Hydrochloric	F	P
10% Nitric	E	E
50% Phosphoric	G	F
37% Sulfuric	E	E
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	E	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	E	E
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	G	F
Mineral Spirits	E	E
Xylene	E	G
Methylene Chloride	P	P
MEK	P	P
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E
20% Sodium Chloride	E	E
10% TSP	E	E

*Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.

Legend: **E- Excellent (Not Effected)**
G-Good (Limited Negative Effect)
F-Fair (Moderate Negative Effect)
P-Poor (Unsatisfactory)

Technical Data Sheet

PIP 3600 EM

Epoxy Mortar System

PROTECTIVE INDUSTRIAL POLYMERS
7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.
CHECK THE SUBSTRATE CONCRETE: Substrate concrete must be free of curing membrane, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect the concrete has been treated or sealed, prepare substrate for complete removal of treatment.
MOISTURE: Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 75% (using ASTM F2170), Protective Industrial Polymers must be consulted and issue a written moisture mitigation recommendation prior to product use.
EXCLUSION: Testing for MVT is effective, however it does not guarantee against future problems. If there is no vapor barrier or the vapor barrier is damaged, vapor transfer can contribute to floor failure. Contamination to concrete from oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) may also contribute to floor failure. Contact your PIP technical representative for additional information.
CHECK THE TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions should be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the floor temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing – Refer to SDS (Safety Data Sheet)**
- **Motorized mortar mixer.**
- **Screed Box.**
- **Hand Trowel.**
- **Power Trowel.**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.
Mechanical Preparation: Shot Blasting or grinding the surface is the preferred method of preparation. A minimum surface profile of ICRI CSP 5 is recommended.

JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

PRIME: **PIP 3600 EM** should be applied over a wet or seeded primer for maximum performance. PIP 3600 EM liquids may be used for this primer. PIP 1000 series (FS, CR and HB) are also suitable primers. Care should be taken not to excessively puddle primers as this may cause uneven grout coat consumption and appearance.

MIXING: (4 bag mix design) Pour 2 gallons of 3600-A, 1 gallon of 3600-B and 1 pint (optional) of CPU-xxx Color into the running mortar mixer. Mix for a minimum of 1 minute. Add 100 lbs. (2 bags) of 3000 Fine Aggregate and 100 lbs (2 bags) of 3000-Series Coarse aggregate.
(If using single blend PIP Trowel Blend as the aggregate source, add 4 bags in place of the 3000 Coarse and 3000 Fine aggregates).
Mix for 3 minutes. Transfer to screed box to apply to the floor.
NOTE: ANY MORTAR LEFT IN THE MIXER FOR EXTENDED PERIODS OF TIME WILL HARDEN!

MIX: It is important to mix all components together for 3 minutes.

APPLY: PIP 3600 EM is installed at a rate of 120 square feet per mix using a screed box. Power trowel the wet mortar to compact, densify, level and smooth the material. Care should be taken not to over-trowel to avoid friction blisters.

GROUTING
PIP 1000 Grout or **PIP 1000 THIXO** are recommended as grout coatings to fill and smooth the surface of the mortar before final finish or top coat application. Apply a tight coat with a flat blade squeegee. Push material in crossing directions minimizing and removing squeegee lines.
Note: The 5 bag mix design will require additional grout coat consumption.

COATING*: PIP 3600 EM* can be top coated with other Protective Industrial Polymer systems after cure. Proper recoat limitations and directions must be honored. If sanding is required, remove all sanding debris with a vacuum. If contaminated with traffic, scrub with detergent and rinse with clean water. Surface must be allowed to dry before coating.

CURING (DRYING): Allow the mortar to cure (dry) for a minimum 24 hours after application at 75°F (24°C) and 50% RH before grinding and applying the grouting resins and finishing with the final desired top coats. Only open the floor to light traffic after sufficient cure, allow more time for low temperatures and higher humidity or for heavier traffic. Full coating properties may take up to 7 days to develop.

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

DISPOSAL: Dispose in accordance with federal, state, and local regulations.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).
CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.

Technical Data Sheet

PIP 3600 EM

Epoxy Mortar System

PROTECTIVE INDUSTRIAL POLYMERS
7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.
CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

WARRANTY AND CONDITIONS OF USAGE

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CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

Protective & Marine Coatings

RESUFLOR™ 3521
EPOXY PRIMER / BINDER

PART A GP3521
PART B GP3521B01
SERIES HARDENER

Revised: December 17, 2021

PRODUCT INFORMATION

PRODUCT DESCRIPTION

RESUFLOR 3521 Epoxy Primer / Binder is a high solids, moisture tolerant epoxy used as a mortar underlayment system designed for sloping and filling applications. The superior wetting properties of the binder resin allow high aggregate loading, providing a cost effective alternative to slower curing materials.

ADVANTAGES

- Low modulus of elasticity, stress relieving epoxy
- Fast setting, next day turnaround
- 6" in single lift
- Moisture tolerant
- Cost effective

TYPICAL USES

RESUFLOR 3521 Epoxy Primer / Binder is typically used in new construction and renovation projects that require deep partching or sloping underlayment. Also used for repairing deep holes and gouges, changing the pitch to an existing slab, or leveling uneven concrete slabs.

LIMITATIONS

- Slab on grade requires vapor/moisture barrier
- During installation and initial cure cycle substrate and ambient air temperature must be at a minimum of 50ºF (10ºC). Substrate temperature must be at least 5ºF (3ºC) above the dew point (for lower temperature installation contact your Sherwin-Williams representative).
- When required, adequate ventilation shall be provided and proper clothing and respirators worn
- All foodstuffs must be removed from the work area and areas subject to fumes during the installation and initial cure
- Extinguish all sources of ignition during the entire installation cycle
- Strictly adhere to published coverage rates

SURFACE PREPARATION

Proper inspection and preparation of the substrate to receive resinous material is critical. Read and follow the "Instructions for Concrete Surface Preparation" (Form G-1) for complete details.

PRODUCT CHARACTERISTICS

Color:	Clear Amber
Mix Ratio:	2:1
Volume Solids:	97% ± 2%, mixed
Weight Solids:	98% ± 2%, mixed
VOC (EPA Method 24):	<100 g/L mixed ; 0.83 lb/gal

Pot Life:	gallon mass	40 minutes	@ 73°F (23ºC)

Shelf Life:	Part A: 36 months, unopened Part B: 36 months, unopened Store indoors at 50°F (10°C) to 90°F (32°C)
Flash Point:	268°F (131°C), ASTM D 93, mixed

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Adhesion	ACI 503R	300 psi concrete failure
Compressive Strength	ASTM D 695	10,000 psi
Flammability		Self-extinguishing over concrete
Flexural Strength	ASTM D 790	4,000 psi
Resistance to Elevated Temperature	MIL-D-3134J	No slip or flow at required temperature of 158ºF (70ºC)
Tensile Strength	ASTM D 638	2,500 psi

Protective & Marine Coatings

RESUFLOR™ 3521
EPOXY PRIMER / BINDER

PART A GP3521
PART B GP3521B01
SERIES HARDENER

Revised: December 17, 2021

PRODUCT INFORMATION

APPLICATION

APPLICATION INSTRUCTIONS (refer to Epoxy Terrazzo Fill Mortar/Screed for complete instructions):

Add 2 parts 3521A (resin) to 1 part 3521B (hardener) by volume. Mix with low speed drill and Jiffy mixer for three minutes and until uniform. Apply via brush, roller, or spray at a rate of 250 square feet per gallon (6 WFT mils). Wait 1-3 hours for primer to become tacky. This prevents primer from sliding during mortar placement. If primer is to be allowed to cure for more than 4 hours, broadcast lightly but uniformly with clean, dry 20-30 mesh aggregate.

ORDERING INFORMATION

Packaging:	
Part A:	1 gallon (3.8L) and 5 gallon (18.9L)
Part B:	1 gallon (3.8L) containers 5 gallon (18.9L)
Weight:	10.6 ± 0.2 lb/gal; 1.27 Kg/L mixed, may vary by color

TINTING

Do not tint.

CLEANUP

Clean up mixing and application equipment immediately after use. Use toluene or xylene. Observe all fire and health precautions when handling or storing solvents.

SAFETY

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

MAINTENANCE

Occasional inspection of the installed material and spot repair can prolong system life. For specific information, contact your Sherwin-Williams representative.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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PROTECTIVE INDUSTRIAL POLYMERS

1000-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 02/10/2020 Supersedes: 09/01/2015

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : 1000-A

Product code : 1000-A

Other means of identification : 1000-A/1, 1000-A/1SF,1000-A/2, 1000-A/5,1000-A/55, 1000-A/Q

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 800-424-9300 (Outside USA) 703-527-3887.

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Skin sensitization Category 1	H317	May cause an allergic skin reaction

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction

Precautionary statements (GHS-US) : P261 - Avoid breathing vapors
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing
P302+P352 - If on skin: Wash with plenty of soap
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane)	(CAS No) 25068-38-6	70 - 80	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Alkyl (C12-C14) Glycidyl Ether	(CAS No) 68609-97-2	10 - 15	Skin Irrit. 2, H315 Skin Sens. 1, H317
Phenol,4-nonyl-,branched	(CAS No) 84852-15-3	0 - 1	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : When symptoms occur: go into open air and ventilate suspected area. Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Do NOT induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries : Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Irritation of the eye tissue. Skin rash/inflammation.

Symptoms/injuries after inhalation : May cause irritation or asthma-like symptoms. May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol resistant foam, water, water fog, CO2, dry chemical, dry sand, limestone powder.

5.2. Specific hazards arising from the chemical

Fire hazard : No data available on direct fire hazard.

Reactivity : Polymerizes on exposure to some compounds e.g. amines, sulphurized compounds and (some) acids: release of heat.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Contain released product. Dam up the liquid spill.

Methods for cleaning up : Absorb spillage to prevent material damage. Cover the solid spill with dry sand/earth/vermiculite soda ash or powdered limestone.

Other information : Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep only in original container. Store in a dry place. Store in a closed container.

Storage area : Keep container in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)

Not applicable

Alkyl (C12-C14) Glycidyl Ether (68609-97-2)

Not applicable

Phenol,4-nonyl-,branched (84852-15-3)

Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hand protection:

Gloves

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Translucent cloudy liquid

Odor : Mild Epoxy Odor

Odor threshold : No data available

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : ≈ 428 °F

Flash point : ≈ 302 °F

Relative evaporation rate (butyl acetate=1) : No data available

Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Specific gravity / density	:	9.5
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Polymerizes on exposure to some compounds e.g. amines, sulphurized compounds and (some) acids: release of heat.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LD50 oral rat	> 2000 mg/kg (OECD 420: Acute Oral toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)

Phenol,4-nonyl-,branched (84852-15-3)	
LD50 oral rat	1412 mg/kg body weight (Other, Rat, Male / female, Experimental value, Oral)
ATE US (oral)	1412 mg/kg body weight

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified

Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Likely routes of exposure	:	Dermal. Ingestion. Inhalation. Skin and eye contact.
Symptoms/injuries	:	Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Irritation of the eye tissue. Skin rash/inflammation.
Symptoms/injuries after inhalation	:	May cause irritation or asthma-like symptoms. May cause respiratory irritation.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

1000-A	
LC50 fish 1	3 mg/kg

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LC50 fish 1	2.3 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	1.1 - 2.8 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	> 11 mg/l (EPA 660/3 - 75/009, 72 h, Scenedesmus sp., Static system, Fresh water, Experimental value)

Phenol,4-nonyl-,branched (84852-15-3)	
LC50 fish 1	0.08 mg/l (ASTM E729-96, 96 h, Hybopsis monacha, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	0.084 mg/l (ASTM E729-88, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value)

12.2. Persistence and degradability

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Persistence and degradability	Not readily biodegradable in water.

Phenol,4-nonyl-,branched (84852-15-3)	
Persistence and degradability	Biodegradability in soil: no data available. Readily biodegradable in water.

12.3. Bioaccumulative potential

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
BCF other aquatic organisms 1	31 (Estimated value, Fresh weight)
Log Pow	2.64 - 3.78 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Phenol,4-nonyl-,branched (84852-15-3)	
BCF fish 1	1200 - 1300 (OECD 305: Bioconcentration: Flow-Through Fish Test, 16 day(s), Gasterosteus aculeatus, Flow-through system, Salt water, Experimental value, Fresh weight)
Log Pow	5.4 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

12.4. Mobility in soil

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Surface tension	58.7 - 58.9 mN/m (20 °C, EU Method A.5: Surface tension)
Log Koc	2.65 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Low potential for adsorption in soil.

Phenol,4-nonyl-,branched (84852-15-3)	
Log Koc	4.35 - 5.69 (log Koc, Other, Experimental value, GLP)
Ecology - soil	Adsorbs into the soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

No additional information available

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Proper Shipping Name (DOT) : Not Regulated
Other information : No supplementary information available.

TDG

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Phenol,4-nonyl-,branched	CAS No 84852-15-3	0 - 1%

15.2. International regulations

CANADA

No additional information available

Alkyl (C12-C14) Glycidyl Ether (68609-97-2)
Listed on the Canadian DSL (Domestic Substances List)

Phenol,4-nonyl-,branched (84852-15-3)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

1000HB-B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/09/2015

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : 1000HB-B

Product code : 1000HB-B

Other means of identification : 1000HB-B/1, 1000HB-B/5, 1000HB-B/55, 1000HB-B/Q

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation, Category 1A H314

Sensitisation — Skin, Category 1 H317

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS05 GHS07

Signal word (GHS-US) : Danger

Contains : 1,3-bis(aminomethyl)benzene; 1-Piperazine ethanamine

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction

Precautionary statements (GHS-US) : P260 - Do not breathe mist, dust
P261 - Avoid breathing fume
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of soap
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
O,O'-Bis(2-aminopropyl)polypropyleneglycol	(CAS No) 9046-10-0	20 - 30	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Phenol,4-nonyl-,branched	(CAS No) 84852-15-3	20 - 30	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1-Piperazine ethanamine	(CAS No) 140-31-8	10 - 20	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1A, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
4-tert-butylphenol	(CAS No) 98-54-4	9.1 - 15	Skin Irrit. 2, H315 Eye Dam. 1, H318
(1,6-Hexanediamine,C,C,C-trimethyl-)	(CAS No) 25620-58-0	6.5 - 11.7	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314
1,3-bis(aminomethyl)benzene	(CAS No) 1477-55-0	0 - 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1A, H314
Benzenemethanol	(CAS No) 100-51-6	0 - 5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 Aquatic Acute 2, H401
4-(2,4-dimethylheptan-3-yl)phenol	(CAS No) 25154-52-3	0.26 - 1.3	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. If skin irritation or rash occurs: When symptoms occur: rinse immediately with plenty of water. Get medical advice/attention. Specific treatment (see Consult a doctor/medical service on this label). Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity : Corrosive vapours.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe fume. Avoid contact during pregnancy/while nursing. Avoid breathing fume.

Hygiene measures : Wash ... thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)
Not applicable

4-(2,4-dimethylheptan-3-yl)phenol (25154-52-3)
Not applicable

Benzenemethanol (100-51-6)
Not applicable

4-tert-butylphenol (98-54-4)
Not applicable

1,3-bis(aminomethyl)benzene (1477-55-0)		
ACGIH	ACGIH Ceiling (mg/m³)	0.1 mg/m³ (m-Xylene alfa,alfa'-diamine; USA; Momentary value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Eye, skin, & GI irr

Phenol,4-nonyl-,branched (84852-15-3)
Not applicable

O,O'-Bis(2-aminopropyl)polypropyleneglycol (9046-10-0)
Not applicable

1-Piperazine ethanamine (140-31-8)
Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or face shield.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : straw colored liquid.
Colour : straw colored liquid
Odour : Ammonical
Odour threshold : No data available
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : > 435 °F
Flash point : > 100 °C
Relative evaporation rate (butylacetate=1) : No data available
Flammability (solid, gas) : No data available
Explosive limits : No data available
Explosive properties : No data available
Oxidising properties : No data available
Vapour pressure : No data available
Relative density : No data available
Relative vapour density at 20 °C : No data available
Density : 1 kg/l
Solubility : Water: Solubility in water of component(s) of the mixture :
• Benzenemethanol: 4.4 g/100ml (50 °C) • 4-tert-butylphenol: 0.06 g/100ml (25 °C, insoluble)
• 1,3-bis(aminomethyl)benzene: Complete • Phenol,4-nonyl-,branched: 5.7 mg/l (25 °C, insoluble) • 1-Piperazine ethanamine: > 10 g/100ml (20 °C, soluble)
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive vapours.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)	
LD50 oral rat	< 910 mg/kg (Rat; Literature study)
ATE US (oral)	500.000 mg/kg bodyweight

4-(2,4-dimethylheptan-3-yl)phenol (25154-52-3)	
ATE US (oral)	500.000 mg/kg bodyweight

Benzenemethanol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Inconclusive, insufficient data)
ATE US (oral)	1620.000 mg/kg bodyweight
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

4-tert-butylphenol (98-54-4)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LC50 inhalation rat (mg/l)	> 5.6 mg/l/4h (Rat; Experimental value)
ATE US (oral)	3370.000 mg/kg bodyweight
ATE US (dermal)	2621.000 mg/kg bodyweight

1,3-bis(aminomethyl)benzene (1477-55-0)	
LD50 oral rat	930 mg/kg (Rat)
LD50 dermal rabbit	2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	2.4 mg/l/4h (Rat)
ATE US (oral)	930.000 mg/kg bodyweight
ATE US (dermal)	2000.000 mg/kg bodyweight
ATE US (vapours)	2.400 mg/l/4h
ATE US (dust,mist)	2.400 mg/l/4h

Phenol,4-nonyl-,branched (84852-15-3)	
LD50 oral rat	1882 mg/kg (Rat; Other; Experimental value; 1412 mg/kg bodyweight; Rat; Experimental value)
ATE US (oral)	1882.000 mg/kg bodyweight
ATE US (dermal)	2040.000 mg/kg bodyweight

1-Piperazine ethanamine (140-31-8)	
ATE US (oral)	1470.000 mg/kg bodyweight
ATE US (dermal)	880.000 mg/kg bodyweight

Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation : May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified due to lack of data.

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)	
LC50 fish 1	172 mg/l (LC50; 48 h; Leuciscus idus; Static system)
EC50 Daphnia 1	31.5 mg/l (EC50; 24 h; Daphnia magna)
Threshold limit algae 1	29.5 mg/l (EC50; 72 h; Scenedesmus subspicatus)

Benzenemethanol (100-51-6)	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)

4-tert-butylphenol (98-54-4)	
EC50 Daphnia 1	3.9 mg/l (EC50; 48 h)
LC50 fish 2	5.14 mg/l (LC50; 96 h)
Threshold limit algae 2	11.2 mg/l (EC50; 72 h)

1,3-bis(aminomethyl)benzene (1477-55-0)	
EC50 Daphnia 1	16 mg/l (EC50; 48 h)
LC50 fish 2	> 100 mg/l (LC50; 96 h)
Threshold limit algae 1	12 mg/l (EC50; 72 h)

Phenol,4-nonyl-,branched (84852-15-3)	
EC50 Daphnia 2	0.085 mg/l (EC50; ASTM E729-88; 48 h; Daphnia magna; Semi-static system; Fresh water; Experimental value)
Threshold limit algae 2	0.027 mg/l (EC50; EPA OTS 797.1050; 96 h; Skeletonema costatum; Static system; Salt water; Experimental value)

1-Piperazine ethanamine (140-31-8)	
LC50 fish 1	> 100 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Experimental value)
EC50 Daphnia 1	58 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system)
Threshold limit algae 2	> 1000 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum; Fresh water)

12.2. Persistence and degradability

1000HB-B	
Persistence and degradability	Not established.

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available. Photodegradation in the air.

Benzenemethanol (100-51-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.6 g O_2/g substance
Chemical oxygen demand (COD)	2.4 g O_2/g substance
ThOD	2.5 g O_2/g substance

4-tert-butylphenol (98-54-4)	
Persistence and degradability	Readily biodegradable in water. Low potential for mobility in soil. Photolysis in the air.
ThOD	2.77 g O_2/g substance

1,3-bis(aminomethyl)benzene (1477-55-0)	
Persistence and degradability	Not readily biodegradable in water.

Phenol,4-nonyl-,branched (84852-15-3)	
Persistence and degradability	Inherently biodegradable. Biodegradability in soil: no data available. Adsorbs into the soil. Photodegradation in the air.

1-Piperazine ethanamine (140-31-8)	
Persistence and degradability	Not readily biodegradable in water. Low potential for mobility in soil.
Chemical oxygen demand (COD)	0.56 g O_2/g substance

12.3. Bioaccumulative potential

1000HB-B	
Bioaccumulative potential	Not established.

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)	
Log Pow	0.7 (Literature)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Benzenemethanol (100-51-6)	
Log Pow	1-1.1,Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

4-tert-butylphenol (98-54-4)	
BCF fish 1	120 (BCF; 3 h)
BCF fish 2	20 - 88 (BCF)
BCF other aquatic organisms 1	34 (BCF; 24 h; Chlorella sp.)
BCF other aquatic organisms 2	240 (BCF; 5 h; Bacteria)
Log Pow	3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,3-bis(aminomethyl)benzene (1477-55-0)	
BCF fish 1	< 2.7 (BCF)
Log Pow	0.15
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Phenol,4-nonyl-,branched (84852-15-3)	
BCF fish 1	271 (BCF; 480 h; Pimephales promelas)
BCF fish 2	1200/1300,BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 32 days; Gasterosteus aculeatus; Flow-through system; Salt water; Experimental value; Fresh weight
Log Pow	3.28 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 5.4; Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

1-Piperazine ethanamine (140-31-8)	
BCF fish 1	<= >0.3<=6.3,BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; >4<=6 weeks; Cyprinus carpio; Flow-through system; Fresh water; Read-across
Log Pow	-1.48 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Benzenemethanol (100-51-6)	
Surface tension	0.04 N/m (20 °C)

4-tert-butylphenol (98-54-4)	
Log Koc	log Koc,3.1; QSAR

Phenol,4-nonyl-,branched (84852-15-3)	
Log Koc	log Koc,Other; >= 4.35 - <= 5.69; Experimental value; GLP

1-Piperazine ethanamine (140-31-8)	
Log Koc	log Koc,4.57; Read-across; GLP

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Remove waste in accordance with local and/or national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2735 Amines, liquid, corrosive, n.o.s., 8, III

UN-No.(DOT) : UN2735

Proper Shipping Name (DOT) : Amines, liquid, corrosive, n.o.s.

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive

Packing group (DOT) : III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102)	:	IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672) T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP
DOT Packaging Exceptions (49 CFR 173.xxx)	:	154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	60 L
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel
DOT Vessel Stowage Other	:	52 - Stow ‘‘separated from’’ acids
Other information	:	No supplementary information available.

TDG

No additional information available

Transport by sea

UN-No. (IMDG)	:	2735
Proper Shipping Name (IMDG)	:	AMINES, LIQUID, CORROSIVE, N.O.S.
Class (IMDG)	:	8 - Corrosive substances
Packing group (IMDG)	:	III - substances presenting low danger

Air transport

UN-No. (IATA)	:	2735
Proper Shipping Name (IATA)	:	Amines, liquid, corrosive, n.o.s.
Class (IATA)	:	8 - Corrosives
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4-(2,4-dimethylheptan-3-yl)phenol (25154-52-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Benzenemethanol (100-51-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4-tert-butylphenol (98-54-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,3-bis(aminomethyl)benzene (1477-55-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Phenol,4-nonyl-,branched (84852-15-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

O,O'-Bis(2-aminopropyl)polypropyleneglycol (9046-10-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1-Piperazine ethanamine (140-31-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

(1,6-Hexanediamine,C,C,C-trimethyl-) (25620-58-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

1,3-bis(aminomethyl)benzene (1477-55-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

1-Piperazine ethanamine (140-31-8)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-statements:

H227	Combustible liquid
H302	Harmful if swallowed
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

2000-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/16/2019 Supersedes: 07/15/2015

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	2000-A
Product code	:	2000-A
Other means of identification	:	2000-A/HG, 2000-A/Q

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 800-424-9300 (Outside USA) 703-527-3887.

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Skin sensitization Category 1	H317	May cause an allergic skin reaction

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) :
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves, protective clothing
P301+P312 - If swallowed: Call a doctor if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse

P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
dipropylene1-(2-methyoxy-1-propoxy)-1-propan-2-ol	(CAS No) 88917-22-0	85 - 95	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Eye Irrit. 2B, H320 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411
dibutyltin dilaurate	(CAS No) 77-58-7	0 - 0.5	Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.

First-aid measures after inhalation : Remove the victim into fresh air.

First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries : Skin rash/inflammation. Irritation of the eye tissue.

Symptoms/injuries after inhalation : Irritation of the respiratory tract.

Symptoms/injuries after skin contact : Slight irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Dry powder. Dry sand. Foam. Water spray. Water.

5.2. Specific hazards arising from the chemical

Fire hazard : No data available on indirect fire hazard.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Protective equipment : Use personal protective equipment as required.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Absorb spillage to prevent material damage. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not eat, drink or smoke when using this product. Do not handle until all safety precautions have been read and understood.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep only in original container.

Incompatible materials : Sources of ignition.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

dipropylene1-(2-methyoxy-1-propoxy)-1-propan-2-ol (88917-22-0)
Not applicable

dibutyltin dilaurate (77-58-7)		
ACGIH	ACGIH TWA (mg/m³)	0.1 mg/m³
ACGIH	ACGIH STEL (mg/m³)	0.2 mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product

Eye protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : clear

Odor : Slight solvent smell

Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	≈ 200 °C
Flash point	:	≈ 86 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Amines. Oxidizing agent.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. irritant gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

2000-A	
ATE US (oral)	500 mg/kg body weight

dipropylene1-(2-methyoxy-1-propoxy)-1-propan-2-ol (88917-22-0)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

dibutyltin dilaurate (77-58-7)	
LD50 oral rat	2071 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
ATE US (oral)	2071 mg/kg body weight

Skin corrosion/irritation	:	Causes skin irritation. Not classified.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Symptoms/injuries	:	Skin rash/inflammation. Irritation of the eye tissue.
Symptoms/injuries after inhalation	:	Irritation of the respiratory tract.
Symptoms/injuries after skin contact	:	Slight irritation.
Symptoms/injuries after eye contact	:	Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified due to lack of data.

dibutyltin dilaurate (77-58-7)	
EC50 Daphnia 1	< 463 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	> 1 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Tin)

12.2. Persistence and degradability

2000-A	
Persistence and degradability	Not established.

dipropylene1-(2-methyoxy-1-propoxy)-1-propan-2-ol (88917-22-0)	
Persistence and degradability	Biodegradability in water: no data available.

dibutyltin dilaurate (77-58-7)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

2000-A	
Bioaccumulative potential	Not established.

dipropylene1-(2-methyoxy-1-propoxy)-1-propan-2-ol (88917-22-0)	
Log Pow	0.66 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

dibutyltin dilaurate (77-58-7)	
BCF fish 1	31 - 813 (Calculated value)
Log Pow	4.44 (Practical experience/observation, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20.8 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).

12.4. Mobility in soil

2000-A	
Ecology - soil	No Data Available.

dibutyltin dilaurate (77-58-7)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Contain and dispose of waste according to local regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Proper Shipping Name (DOT) : Not Regulated

Other information : No supplementary information available.

TDG

Transport by sea

Air transport

Transport document description (IATA) : UN Not Regulated

UN-No. (IATA) : Not Regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

2000-A
Listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

2000-A
Safety Data Sheet

Full text of H-phrases:

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H320	Causes eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

2000-B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/16/2019 Supersedes: 07/06/2015

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	2000-B
Product code	:	2000-B
Other means of identification	:	2000-B/1, 2000-B/2, 2000-B/55

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 800-424-9300 (Outside USA) 703-527-3887.

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Respiratory sensitisation Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements (GHS-US) :
P261 - Avoid breathing fume, vapors
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear protective clothing
P284 - In case of poor ventilation
P302+P352 - If on skin: Wash with plenty of soap
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P342+P311 - If experiencing respiratory symptoms: Call a doctor
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

2.3. Other hazards which do not result in classification

Other hazards not contributing to the : None under normal conditions.

classification

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Hexamethylene Diisocyanate	(CAS No) 28182-81-2	80 - 90	Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317
Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester	(CAS No) 822-06-0	0 - 0.5	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation:dust,mist), H330

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water.

First-aid measures after eye contact : Rinse immediately with plenty of water.

First-aid measures after ingestion : Give nothing or a little water to drink. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after inhalation : Irritation of respiratory tract.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : Irritation of the gastric/intestinal mucosa.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol resistant foam, water, water fog, CO2, dry chemical, dry sand, limestone powder.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No special environmental precuations required.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Dam up the liquid spill.

Methods for cleaning up : Absorb spillage to prevent material damage. Cover the solid spill with dry sand/earth/vermiculite soda ash or powdered limestone.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Work under local exhaust/ventilation. Wear personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in a dry place. Store in a closed container.

Incompatible products : Strong acids. Strong bases.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hexamethylene Diisocyanate (28182-81-2)
Not applicable

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)		
ACGIH	Local name	Hexamethylene diisocyanate
ACGIH	ACGIH TWA (ppm)	0.005 ppm
ACGIH	Remark (ACGIH)	URT irr; resp sens

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product

Eye protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Colourless to light yellow

Odor : Faint Odor

Odor threshold : No data available

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : 208 °C

Relative evaporation rate (butyl acetate=1) : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	> 200 °C
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong acids, strong bases and oxidation agents.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)	
LD50 oral rat	746 mg/kg (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	599 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	0.124 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	745 mg/kg body weight
ATE US (dermal)	599 mg/kg body weight
ATE US (gases)	45 ppmV/4h
ATE US (vapors)	0.31 mg/l/4h
ATE US (dust, mist)	0.31 mg/l/4h

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Not classified.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified

Symptoms/injuries after inhalation : Irritation of respiratory tract.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes eye irritation.
Symptoms/injuries after ingestion : Irritation of the gastric/intestinal mucosa.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified due to lack of data.

12.2. Persistence and degradability

2000-B	
Persistence and degradability	Not established.

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

2000-B	
Bioaccumulative potential	Not established.

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)	
Log Pow	1.08 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

2000-B	
Ecology - soil	No Data Available.

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)	
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Collect all waste in suitable and labeled containers and dispose according to local legislation.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Proper Shipping Name (DOT) : Not Regulated
Other information : No supplementary information available.

TDG

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester	CAS No 822-06-0	0 - 0.5%

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)	
CERCLA RQ	100 lb

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester (822-06-0)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-phrases:

H302	Harmful if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

1000HC-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/01/2015

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : 1000HC-A

Product code : 1000HC-A

Other means of identification : 1000HC-A/5, 1000HC-A/5SF,1000HC-A/5

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation, Category 2 H315

Sensitisation — Skin, Category 1 H317

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07

Signal word (GHS-US) : Warning

Contains : (Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane); Alkyl (C12-C14) Glycidyl Ether; Solvent naphtha (petroleum), light aromatic

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction

Precautionary statements (GHS-US) :
P261 - Avoid breathing vapours
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing
P302+P352 - If on skin: Wash with plenty of soap
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane)	(CAS No) 25068-38-6	70 - 80	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Alkyl (C12-C14) Glycidyl Ether	(CAS No) 68609-97-2	10 - 15	Skin Irrit. 2, H315 Skin Sens. 1, H317
Phenol,4-nonyl-,branched	(CAS No) 84852-15-3	0 - 1	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : When symptoms occur: go into open air and ventilate suspected area. Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Irritation of the eye tissue. Skin rash/inflammation.

Symptoms/injuries after inhalation : May cause irritation or asthma-like symptoms. May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam, water, water fog, CO2, dry chemical, dry sand, limestone powder.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No data available on direct fire hazard.

Reactivity : Polymerizes on exposure to some compounds e.g. amines, sulphurized compounds and (some) acids: release of heat.

5.3. Advice for firefighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Collect spillage. Contain leaking substance. Dam up the liquid spill.
Methods for cleaning up	:	Absorb spillage to prevent material damage. Cover the solid spill with dry sand/earth/vermiculite soda ash or powdered limestone.
Other information	:	Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wear personal protective equipment.
Hygiene measures	:	Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep container closed when not in use. Keep only in original container. Store in a dry place. Store in a closed container.
Storage area	:	Keep container in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)

Not applicable

Alkyl (C12-C14) Glycidyl Ether (68609-97-2)

Not applicable

Phenol,4-nonyl-,branched (84852-15-3)

Not applicable

8.2. Exposure controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Personal protective equipment	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hand protection	:	Gloves.
Eye protection	:	Chemical goggles or safety glasses.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Translucent cloudy liquid
Odour	:	Mild Epoxy Odor
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	≈ 428 °F
Flash point	:	≈ 302 °F
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available

Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Density	:	9.5
Solubility	:	Water: Solubility in water of component(s) of the mixture : • (Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane): mg/l (insoluble) 5.4-8.4 • Xylenes: < 0.02 g/100ml • 2-Phenoxyethanol: 2.7 g/100ml • Phenol,4-nonyl-,branched: 5.7 mg/l (25 °C, insoluble) • 1-methoxy-2-propyl acetate: 19.8 g/100ml (20 °C, soluble) • Solvent naphtha (petroleum), light aromatic: < 0.01 g/100ml
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Polymerizes on exposure to some compounds e.g. amines, sulphurized compounds and (some) acids: release of heat.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	:	Dermal; Ingestion; Inhalation; Skin and eye contact
Acute toxicity	:	Not classified

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 420: Acute Oral toxicity – Acute Toxic Class Method; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

Phenol,4-nonyl-,branched (84852-15-3)	
LD50 oral rat	1882 mg/kg (Rat; Other; Experimental value; 1412 mg/kg bodyweight; Rat; Experimental value)
ATE US (oral)	1882.000 mg/kg bodyweight
ATE US (dermal)	2040.000 mg/kg bodyweight

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitisation	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified

Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified
Symptoms/injuries after inhalation	:	May cause irritation or asthma-like symptoms. May cause respiratory irritation.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

1000HC-A	
LC50 fish 1	3 mg/kg

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LC50 fish 2	2.3 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Experimental value)
EC50 Daphnia 2	1.1 - 2.8 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

Phenol,4-nonyl-,branched (84852-15-3)	
EC50 Daphnia 2	0.085 mg/l (EC50; ASTM E729-88; 48 h; Daphnia magna; Semi-static system; Fresh water; Experimental value)
Threshold limit algae 2	0.027 mg/l (EC50; EPA OTS 797.1050; 96 h; Skeletonema costatum; Static system; Salt water; Experimental value)

12.2. Persistence and degradability

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. Low potential for adsorption in soil.

Phenol,4-nonyl-,branched (84852-15-3)	
Persistence and degradability	Inherently biodegradable. Biodegradability in soil: no data available. Adsorbs into the soil. Photodegradation in the air.

12.3. Bioaccumulative potential

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
BCF other aquatic organisms 1	3 - 31 (BCF)
Log Pow	>= 2.918 (Experimental value; EU Method A.8: Partition Coefficient; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

Phenol,4-nonyl-,branched (84852-15-3)	
BCF fish 1	271 (BCF; 480 h; Pimephales promelas)
BCF fish 2	1200/1300,BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 32 days; Gasterosteus aculeatus; Flow-through system; Salt water; Experimental value; Fresh weight
Log Pow	3.28 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 5.4; Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

12.4. Mobility in soil

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Surface tension	0.0 587-0.0589,20 °C
Log Koc	log Koc,SRC PCKOCWIN v2.0; 2.65; QSAR

Phenol,4-nonyl-,branched (84852-15-3)	
Log Koc	log Koc,Other; >= 4.35 - <= 5.69; Experimental value; GLP

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

No additional information available

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-statements:

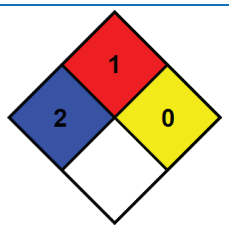
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

1000HC-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	:	2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	2 Moderate Hazard - Temporary or minor injury may occur
Flammability	:	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

1000HC-B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/01/2015

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : 1000HC-B

Product code : 1000HC-B

Other means of identification : 100HC-B/55, 1000HC-B/5, 1000HC-B/1

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302
Acute toxicity (dermal), Category 4	H312
Skin corrosion/irritation, Category 1B	H314
Serious eye damage/eye irritation, Category 1	H318
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS05 GHS07 GHS09

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H302+H312 - Harmful if swallowed or in contact with skin
H314 - Causes severe skin burns and eye damage
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) : P260 - Do not breathe vapours
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective clothing
P301+P312 - If swallowed: Call a POISON CENTER if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of soap, water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor if symptoms persist
P312 - Call a doctor if you feel unwell
P321 - Specific treatment (see a doctor if symptoms persist. on this label)

P330 - Rinse mouth
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Amine-terminated cycloaliphatic propoxylate	(CAS No) 1220986-58-2	30-60	Not classified
Benzenemethanol	(CAS No) 100-51-6	13 - 30	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 Aquatic Acute 2, H401
1,4-bis(aminomethyl)cyclohexane	(CAS No) 2549-93-1	7 - 13	Acute Tox. 4 (Dermal), H312

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Symptoms/injuries after skin contact : Burns.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns. Harmful if swallowed. May cause burns to mouth, throat and stomach.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Special protective equipment for fire fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid contact with skin, eyes and clothing. Do not breathe vapours.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Do not breathe vapours.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible products : No specific data.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Amine-terminated cycloaliphatic propoxylate (1220986-58-2)
Not applicable

1,4-bis(aminomethyl)cyclohexane (2549-93-1)
Not applicable

Benzenemethanol (100-51-6)
Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Hand protection : Protective gloves.

Eye protection : Safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : straw colored liquid clear

Odour : Ammonical

Odour threshold : No data available

pH : > 93 Closed Cup

Melting point : Not applicable

Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	> 93 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Density	:	8.5 lbs./gal.
Solubility	:	Water: Solubility in water of component(s) of the mixture : • Benzenemethanol: 4.4 g/100ml (50 °C)
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin.

1000HC-B	
ATE US (oral)	500.000 mg/kg bodyweight
ATE US (dermal)	1100.000 mg/kg bodyweight

1,4-bis(aminomethyl)cyclohexane (2549-93-1)	
LD50 oral rat	2500 mg/kg
LD50 dermal rabbit	1300 mg/kg
ATE US (oral)	2500.000 mg/kg bodyweight
ATE US (dermal)	1300.000 mg/kg bodyweight

Benzenemethanol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Inconclusive, insufficient data)

Benzenemethanol (100-51-6)	
ATE US (oral)	1620.000 mg/kg bodyweight
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: > 93 Closed Cup

Serious eye damage/irritation : Causes serious eye damage.
pH: > 93 Closed Cup

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Symptoms/injuries after skin contact : Burns.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns. Harmful if swallowed. May cause burns to mouth, throat and stomach.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

Benzenemethanol (100-51-6)	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)

12.2. Persistence and degradability

Benzenemethanol (100-51-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.6 g O_2/g substance
Chemical oxygen demand (COD)	2.4 g O_2/g substance
ThOD	2.5 g O_2/g substance

12.3. Bioaccumulative potential

Benzenemethanol (100-51-6)	
Log Pow	1-1.1,Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

1000HC-B	
Ecology - soil	No Data Available.

Benzenemethanol (100-51-6)	
Surface tension	0.04 N/m (20 °C)

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions. The generation of waste should be avoided or minimized wherever possible. Dispose of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2735 Amines, liquid, corrosive, n.o.s. (Amine-terminated cycloaliphatic propoxylate, 1,4-Bis(aminomethyl)cyclohexane), 8, II

UN-No.(DOT) : UN2735

Proper Shipping Name (DOT) : Amines, liquid, corrosive, n.o.s.
Amine-terminated cycloaliphatic propoxylate, 1,4-Bis(aminomethyl)cyclohexane

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive

Packing group (DOT) : II - Medium Danger

Dangerous for the environment : Yes

Marine pollutant : Yes

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102) : B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized
T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling
TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel

DOT Vessel Stowage Other : 52 - Stow "separated from" acids

Other information	:	Marine pollutants are only regulated for bulk and vessel shipments, per 49CFR171.4(c) Exceptions. Except when all or part of the transportation by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.

TDG

Transport document description	:	2735 Amines, Liquid, corrosive, n.o.s.(Amine-terminated cycloaliphatic propoxylate, 1,4-Bis(aminomethyl)cyclohexane), 8, II
UN-No. (TDG)	:	2735
TDG Proper Shipping Name	:	Amines, Liquid, corrosive, n.o.s.(Amine-terminated cycloaliphatic propoxylate, 1,4-Bis(aminomethyl)cyclohexane)
TDG Primary Hazard Classes	:	8 - Class 8 - Corrosives
Packing group	:	II - Medium Danger
TDG Special Provisions	:	The marine pollutant mark is not required when transported by road or rail

Transport by sea

UN-No. (IMDG)	:	2735
Proper Shipping Name (IMDG)	:	AMINES, LIQUID, CORROSIVE, N.O.S.
Class (IMDG)	:	8 - Corrosive substances
Packing group (IMDG)	:	II - substances presenting medium danger
Limited quantities (IMDG)	:	The marine pollutant mark is not required when transported in sized of =<5L or =<5 kg.
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-B

Air transport

UN-No. (IATA)	:	2735
Proper Shipping Name (IATA)	:	Amines, liquid, corrosive, n.o.s.
Class (IATA)	:	8 - Corrosives
Packing group (IATA)	:	II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

1000HC-B	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

1000HC-B	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

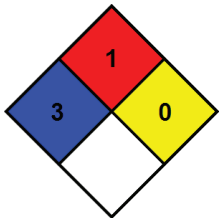
Full text of H-statements:

H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

* - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

20- - BS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/16/2019 Supersedes: 07/06/2015

ECTI ON 1: Identification

0.0. Identification

Product form	:	Mixture
Product name	:	2100-B
Product code	:	2100-B
Other means of identification	:	2100-B/1, 2100-B/2, 2100-B/55

0.2. Recommended use and restrictions on use

No additional information available

0.3. Supplier

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

0.4. Emergency telephone number

Emergency number	:	CHEMTREC: 800-424-9300 (Outside USA) 703-527-3887.

ECTI ON 2: Hazard(s) identification

2.0. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Respiratory sensitisation Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements (GHS-US) :
P261 - Avoid breathing fume, vapors
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear protective clothing
P284 - In case of poor ventilation
P302+P352 - If on skin: Wash with plenty of soap
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P342+P311 - If experiencing respiratory symptoms: Call a doctor
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

2.3. Other hazards which do not result in classification

Other hazards not contributing to the : None under normal conditions.

classification

2.4. Unknown acute toxicity (GHE UE)

Not applicable

ECTI ON 3: Composition/Information on ingredients

3.0. Substances

Not applicable

3.2. Mixtures

ame	Product identifier	%	GHE BJE classification
Hexamethylene Diisocyanate	(CAS No) 28182-81-2	80 - 90	Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317
Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester	(CAS No) 822-06-0	0 - 0.5	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation:dust,mist), H330

Full text of hazard classes and H-statements : see section 16

ECTI ON 4: First aid measures

4.0. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water.

First-aid measures after eye contact : Rinse immediately with plenty of water.

First-aid measures after ingestion : Give nothing or a little water to drink. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after inhalation : Irritation of respiratory tract.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : Irritation of the gastric/intestinal mucosa.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

ECTI ON 5: Fire fighting measures

5.0. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol resistant foam, water, water fog, CO2, dry chemical, dry sand, limestone powder.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire fighters

Firefighting instructions : Wear self-contained breathing apparatus for firefighting if necessary.

ECTI ON 6: Accidental release measures

6.0. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

6.0.0. For non emergency personnel

No additional information available

6.0.2. For emergency responders

No additional information available

6.2. Environmental precautions

No special environmental precuations required.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Dam up the liquid spill.

Methods for cleaning up : Absorb spillage to prevent material damage. Cover the solid spill with dry sand/earth/vermiculite soda ash or powdered limestone.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.0. Precautions for safe handling

Precautions for safe handling : Work under local exhaust/ventilation. Wear personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in a dry place. Store in a closed container.

Incompatible products : Strong acids. Strong bases.

SECTION 8: Exposure controls/personal protection

8.0. Control parameters

Hexamethylene Diisocyanate (28082B30B2)		
Not applicable		

Hexane,0,6Bdiisocyanato,3Bcyanic acid,1hexamethylene ester (822B6B)		
ACGIH	Local name	Hexamethylene diisocyanate
ACGIH	ACGIH TWA (ppm)	0.005 ppm
ACGIH	Remark (ACGIH)	URT irr; resp sens

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product

Eye protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.0. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Colourless to light yellow
Odor	:	Faint Odor
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	208 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available

Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	> 200 °C
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Nther1information

No additional information available

ECTI 0N 10-:1Etability1and1reactivity

0-.0. Reactivity

No additional information available

0-.2. Themical1stability

Stable under normal conditions.

0-.3. Possibility1of1hazardous1reactions

Will not occur.

0-.4. Tonditions1to1avoid

No additional information available

0-.5. Ncompatible1materials

Strong acids, strong bases and oxidation agents.

0-.6. Hazardous1decomposition1products

No additional information available

ECTI 0N 100:1 oxicological1information

00.0. Nformation1on1toxicological1effects

Acute toxicity : Not classified

Hexane,0,6Bdiisocyanato3,Nocyanic1acid,1hexamethylene1ester1(822B 6B)	
LD50 oral rat	746 mg/kg (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	599 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	0.124 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	745 mg/kg body weight
ATE US (dermal)	599 mg/kg body weight
ATE US (gases)	45 ppmV/4h
ATE US (vapors)	0.31 mg/l/4h
ATE US (dust, mist)	0.31 mg/l/4h

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Not classified.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified

Symptoms/injuries after inhalation : Irritation of respiratory tract.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes eye irritation.
Symptoms/injuries after ingestion : Irritation of the gastric/intestinal mucosa.

ECTI ON 102:1Ccological1information

02.0. I oxicity

Ecology - general : Not classified due to lack of data.

02.2. Persistence1and1degradability

20- - BS1	
Persistence and degradability	Not established.

Hexane,0,6Bdiisocyanto B,3socyanic1acid,1hexamethylene1ester1(822B 6B)	
Persistence and degradability	Not readily biodegradable in water.

02.3. Sioaccumulative1potential

20- - BS1	
Bioaccumulative potential	Not established.

Hexane,0,6Bdiisocyanto B,3socyanic1acid,1hexamethylene1ester1(822B 6B)	
Log Pow	1.08 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

02.4. Mobility1in1soil

20- - BS1	
Ecology - soil	No Data Available.

Hexane,0,6Bdiisocyanto B,3socyanic1acid,1hexamethylene1ester1(822B 6B)	
Ecology - soil	Low potential for adsorption in soil.

02.5. Nther1adverse1effects

No additional information available

ECTI ON 103:1Disposal1considerations

03.0. Disposal1methods

Waste treatment methods : Collect all waste in suitable and labeled containers and dispose according to local legislation.

ECTI ON 104:1 ransport1information

Department1of1 ransportation1(DNI)

In accordance with DOT

Proper Shipping Name (DOT) : Not Regulated
Other information : No supplementary information available.

I DG

I ransport1by1sea

Not applicable

Air1transport

Not applicable

ECTI ON 105:1Regulatory1information

05.0.1UE1Federal1regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Hexane,1,6-diisocyanto-;Isocyanic acid, hexamethylene ester	CAS No 822-06-0	0 - 0.5%

Hexane,0,6BdiisocyantoB3Gocyanic1acid,1hexamethylene1ester1(822B 6B)	
CERCLA RQ	100 lb

05.2.10nternational1regulations

TA ADA
No additional information available

CUBRegulations
No additional information available

ational1regulations
No additional information available

05.3.1UE1Etate1regulations

Hexane,0,6Bdiisocyantob3Gocyanic1acid,1hexamethylene1ester1(822B 6B)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

ECTI 0N 106:1Nther1information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-phrases:

H302	Harmful if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

3600-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/19/2015

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	3600-A
Product code	:	3600-A
Other means of identification	:	3600-A/1, 3600-A/5, 3600-A/55

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2A	H319
Sensitisation — Skin, Category 1	H317
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity — Repeated exposure, Category 1	H372

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Danger

Contains : (Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane)

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H372 - Causes damage to organs (Skin) through prolonged or repeated exposure (Dermal)

Precautionary statements (GHS-US) :
P260 - Do not breathe vapours
P261 - Avoid breathing vapours
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing
P302+P352 - If on skin: Wash with plenty of soap
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a doctor if symptoms persist. if you feel unwell
P314 - Get medical advice/attention if you feel unwell

P321 - Specific treatment (see Call a doctor if symptoms persist. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane)	(CAS No) 25068-38-6	84.7875 - 94.7625	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
2,3-Epoxypropyl neodecanoate	(CAS No) 26761-45-5	4.9875 - 14.9625	Skin Irrit. 2, H315

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Heating may cause a fire.

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Do not breathe vapours. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	:	Take up liquid spill into absorbent material.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Do not breathe vapours. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures	:	Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Incompatible products	:	No specific data.
Incompatible materials	:	No known incompatible materials.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)
Not applicable

2,3-Epoxypropyl neodecanoate (26761-45-5)
Not applicable

8.2. Exposure controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Hand protection	:	Protective gloves.
Eye protection	:	Safety glasses.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental exposure controls	:	Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	light yellow
Odour	:	characteristic
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	230 °F
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available

Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Density	:	1.13 g/cm³
Solubility	:	Immiscible. Water: Solubility in water of component(s) of the mixture : • (Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane): mg/l (insoluble) 5.4-8.4 • 2,3-Epoxypropyl neodecanoate: 0.01 g/100ml
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 420: Acute Oral toxicity – Acute Toxic Class Method; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

2,3-Epoxypropyl neodecanoate (26761-45-5)	
LD50 oral rat	> 9600 mg/kg (Rat)
LD50 dermal rabbit	> 3800 mg/kg (Rabbit)

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitisation	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)	:	Causes damage to organs (Skin) through prolonged or repeated exposure (Dermal).
Aspiration hazard	:	Not classified
Symptoms/injuries after inhalation	:	May cause respiratory irritation.
Symptoms/injuries after skin contact	:	Irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	:	Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
LC50 fish 2	2.3 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Experimental value)
EC50 Daphnia 2	1.1 - 2.8 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

2,3-Epoxypropyl neodecanoate (26761-45-5)	
LC50 fish 2	5 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Salmo gairdneri)
EC50 Daphnia 2	4.8 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna)
Threshold limit algae 2	3.5 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 96 h; Selenastrum capricornutum)

12.2. Persistence and degradability

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. Low potential for adsorption in soil.

2,3-Epoxypropyl neodecanoate (26761-45-5)	
Persistence and degradability	Inherently biodegradable. Not readily biodegradable in water. Biodegradability in soil: no data available. Adsorbs into the soil. Photolysis in the air.

12.3. Bioaccumulative potential

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
BCF other aquatic organisms 1	3 - 31 (BCF)
Log Pow	>= 2.918 (Experimental value; EU Method A.8: Partition Coefficient; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

2,3-Epoxypropyl neodecanoate (26761-45-5)	
Log Pow	4.4 (Experimental value)
Bioaccumulative potential	Bioaccumable.

12.4. Mobility in soil

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) (25068-38-6)	
Surface tension	0.0 587-0.0589,20 °C
Log Koc	log Koc,SRC PCKOCWIN v2.0; 2.65; QSAR

2,3-Epoxypropyl neodecanoate (26761-45-5)	
Surface tension	0.03 N/m (25 °C)

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

TDG

TDG Proper Shipping Name : Not Regulated

Transport by sea

UN-No. (IMDG) : 3082

Proper Shipping Name (IMDG) : Environmentally Hazardous Substance, Liquid, N.O.S (Epoxide Derivatives)

Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

Packing group (IMDG) : III - substances presenting low danger

Air transport

UN-No. (IATA) : 3082

Proper Shipping Name (IATA) : Environmentally Hazardous Substance, Liquid, N.O.S (Epoxide Derivatives)

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

3600-A
Listed on the United States TSCA (Toxic Substances Control Act) inventory

(Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane) **(25068-38-6)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

2,3-Epoxypropyl neodecanoate (26761-45-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

3600-A	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Full text of H-statements:

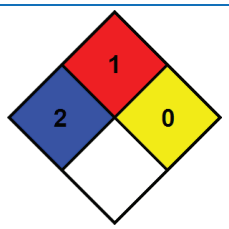
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H372	Causes damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

3600-A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	:	2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	2 Moderate Hazard - Temporary or minor injury may occur
Flammability	:	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

PROTECTIVE INDUSTRIAL POLYMERS

3600-B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 07/09/2015

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	3600-B
Product code	:	3600-B
Other means of identification	:	3600-B/1 3600-B/5, 3600-B/55

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
7875 Bliss Parkway
North Ridgeville, Ohio 44039 - USA-Ohio
T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (inhal.), Category 4	H332
Skin corrosion/irritation, Category 1B	H314
Sensitisation — Respiratory, Category 1B	H334
Sensitisation — Skin, Category 1	H317

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS05 GHS07 GHS08

Signal word (GHS-US) : Danger

Contains : 1,3-bis(aminomethyl)benzene; Tetraethylenepentamine; (Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-)

Hazard statements (GHS-US) :
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements (GHS-US) :
P260 - Do not breathe vapours
P261 - Avoid breathing vapours
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing
P284 - In case of poor ventilation
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of soap, water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor if symptoms persist
P312 - Call a doctor if symptoms persist. if you feel unwell

P321 - Specific treatment (see a doctor if symptoms do not go away. on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P342+P311 - If experiencing respiratory symptoms: Call a doctor if symptoms persist
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	(CAS No) 68953-36-6	> 50	Skin Sens. 1, H317
Benzenemethanol	(CAS No) 100-51-6	< 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 Aquatic Acute 2, H401
1,3-bis(aminomethyl)benzene	(CAS No) 1477-55-0	< 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1A, H314
(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-)	(CAS No) 2855-13-2	< 10	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314
2,4,6-tris(dimethylaminomethyl)phenol	(CAS No) 90-72-2	< 10	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315
4-tert-butylphenol	(CAS No) 98-54-4	< 5	Skin Irrit. 2, H315 Eye Dam. 1, H318
Tetraethylenepentamine	(CAS No) 112-57-2	< 5	Acute Tox. 3 (Dermal), H311 Skin Corr. 1A, H314
Poly(m-xylylenediamine-alt-epichlorohydrin), diamine terminated	(CAS No) 135470-04-1	< 5	Acute Tox. 2 (Oral), H300 Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314 Resp. Sens. 1B, H334 Skin Sens. 1, H317
Phenol-2-carboxylic acid	(CAS No) 69-72-7	< 2	Acute Tox. 4 (Oral), H302

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/injuries after skin contact : Burns. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Water spray. alcohol resistant foam.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Fire-fighter should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe vapours.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Keep in suitable closed containers for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Do not breathe vapours. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible products : Oxidizing agent. Strong acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzenemethanol (100-51-6)

Not applicable

Tetraethylenepentamine (112-57-2)

Not applicable

Poly(m-xylylenediamine-alt-epichlorohydrin), diamine terminated (135470-04-1)

Not applicable

1,3-bis(aminomethyl)benzene (1477-55-0)

ACGIH	ACGIH Ceiling (mg/m³)	0.1 mg/m³ (m-Xylene alfa,alfa'-diamine; USA; Momentary value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Eye, skin, & GI irr

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)

Not applicable

Phenol-2-carboxylic acid (69-72-7)

Not applicable

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)
Not applicable

4-tert-butylphenol (98-54-4)
Not applicable

Fatty acids, tall-oil, reaction products with tetraethylenepentamine (68953-36-6)
Not applicable

8.2. Exposure controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Hand protection	:	Protective gloves.
Eye protection	:	Safety glasses.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	Wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	According to product specifications
Odour	:	Characteristic odour
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	401 °F
Flash point	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	0.1 hPa
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Solubility	:	Water: Solubility in water of component(s) of the mixture : • Benzenemethanol: 4.4 g/100ml (50 °C) • 4-tert-butylphenol: 0.06 g/100ml (25 °C, insoluble) • Phenol-2-carboxylic acid: 0.2 g/100ml • 1,3-bis(aminomethyl)benzene: Complete • Tetraethylenepentamine: Complete • Poly(m-xylylenediamine-alt-epichlorohydrin), diamine terminated: _11-12-AV010 • (Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-): > 49.2 g/100ml (24 °C, soluble) • 2,4,6-tris(dimethylaminomethyl)phenol: > 16 g/100ml
Log Pow	:	No data available
Auto-ignition temperature	:	335 °C
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No specific data.

10.6. Hazardous decomposition products

irritant gases. Nitrogen. Ammonia. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation: Harmful if inhaled. Oral: Not classified.

3600-B	
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

Benzenemethanol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Inconclusive, insufficient data)
ATE US (oral)	1620.000 mg/kg bodyweight
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

Tetraethylenepentamine (112-57-2)	
LD50 oral rat	3990 mg/kg (Rat; Literature study; 3250 mg/kg bodyweight; Rat; Literature study)
LD50 dermal rabbit	660 mg/kg (Rabbit; Literature study; 660-1260 mg/kg bodyweight; Rabbit; Literature study)
ATE US (oral)	3990.000 mg/kg bodyweight
ATE US (dermal)	660.000 mg/kg bodyweight

Poly(m-xylylenediamine-alt-epichlorohydrin), diamine terminated (135470-04-1)	
ATE US (oral)	5.000 mg/kg bodyweight

1,3-bis(aminomethyl)benzene (1477-55-0)	
LD50 oral rat	930 mg/kg (Rat)
LD50 dermal rabbit	2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	2.4 mg/l/4h (Rat)
ATE US (oral)	930.000 mg/kg bodyweight
ATE US (dermal)	2000.000 mg/kg bodyweight
ATE US (vapours)	2.400 mg/l/4h
ATE US (dust,mist)	2.400 mg/l/4h

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)	
LD50 oral rat	1030 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	> 5.01 mg/l/4h (Rat; Experimental value)
ATE US (oral)	1030.000 mg/kg bodyweight

Phenol-2-carboxylic acid (69-72-7)	
LD50 oral rat	891 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat)
LD50 dermal rabbit	> 10000 mg/kg (Rabbit)
ATE US (oral)	891.000 mg/kg bodyweight

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	1200 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 2169 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Literature study; Other; >1 ml/kg; Rat; Experimental value)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
ATE US (oral)	1200.000 mg/kg bodyweight

4-tert-butylphenol (98-54-4)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LC50 inhalation rat (mg/l)	> 5.6 mg/l/4h (Rat; Experimental value)
ATE US (oral)	3370.000 mg/kg bodyweight
ATE US (dermal)	2621.000 mg/kg bodyweight

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/injuries after skin contact : Burns. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

Benzenemethanol (100-51-6)	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)

Tetraethylenepentamine (112-57-2)	
EC50 Daphnia 1	24.1 mg/l (EC50; EU Method C.2; 48 h; Daphnia magna; Static system)
LC50 fish 2	420 mg/l (LC50; EU Method C.1; 96 h; Poecilia reticulata; Semi-static system; Fresh water; Experimental value)
Threshold limit algae 1	0.5 mg/l (NOEC; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum)
Threshold limit algae 2	6.8 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum)

1,3-bis(aminomethyl)benzene (1477-55-0)	
EC50 Daphnia 1	16 mg/l (EC50; 48 h)
LC50 fish 2	> 100 mg/l (LC50; 96 h)
Threshold limit algae 1	12 mg/l (EC50; 72 h)

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)	
LC50 fish 2	110 mg/l (LC50; EU Method C.1; 96 h; Leuciscus idus; Semi-static system; Fresh water; Experimental value)

Phenol-2-carboxylic acid (69-72-7)	
LC50 fish 1	90 mg/l (LC50; DIN 38412-15; 48 h; Leuciscus idus; Static system; Fresh water; Experimental value)
Threshold limit algae 1	> 100 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Desmodesmus subspicatus)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
EC50 Daphnia 2	41.3 mg/l (LC50; 48 h; Daphnia magna)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Threshold limit algae 2	84 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Scenedesmus subspicatus; Static system; Fresh water; Experimental value)

4-tert-butylphenol (98-54-4)	
EC50 Daphnia 1	3.9 mg/l (EC50; 48 h)
LC50 fish 2	5.14 mg/l (LC50; 96 h)
Threshold limit algae 2	11.2 mg/l (EC50; 72 h)

12.2. Persistence and degradability

Benzenemethanol (100-51-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.6 g O_2/g substance
Chemical oxygen demand (COD)	2.4 g O_2/g substance
ThOD	2.5 g O_2/g substance

Tetraethylenepentamine (112-57-2)	
Persistence and degradability	Not readily biodegradable in water. Low potential for mobility in soil. Adsorbs into the soil.

1,3-bis(aminomethyl)benzene (1477-55-0)	
Persistence and degradability	Not readily biodegradable in water.

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)	
Persistence and degradability	Not readily biodegradable in water. Low potential for adsorption in soil.

Phenol-2-carboxylic acid (69-72-7)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil.
Biochemical oxygen demand (BOD)	0.95 g O_2/g substance
Chemical oxygen demand (COD)	1.58 g O_2/g substance
ThOD	1.623 g O_2/g substance
BOD (% of ThOD)	0.41 - 0.60

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Persistence and degradability	Not readily biodegradable in water. Highly mobile in soil. Low potential for adsorption in soil.

4-tert-butylphenol (98-54-4)	
Persistence and degradability	Readily biodegradable in water. Low potential for mobility in soil. Photolysis in the air.
ThOD	2.77 g O_2/g substance

12.3. Bioaccumulative potential

Benzenemethanol (100-51-6)	
Log Pow	1-1.1,Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Tetraethylenepentamine (112-57-2)	
BCF other aquatic organisms 1	4.2 (BCF)
Log Pow	-3.16 (Calculated; EPIWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,3-bis(aminomethyl)benzene (1477-55-0)	
BCF fish 1	< 2.7 (BCF)
Log Pow	0.15
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)	
BCF other aquatic organisms 1	3.16 (BCF; BCFWIN)
Log Pow	0.99 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Phenol-2-carboxylic acid (69-72-7)	
Log Pow	2.25 (Experimental value; Equivalent or similar to OECD 117; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Log Pow	0.77 (Literature; 0.219; Experimental value; Equivalent or similar to OECD 107; 21.5 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

4-tert-butylphenol (98-54-4)	
BCF fish 1	120 (BCF; 3 h)
BCF fish 2	20 - 88 (BCF)
BCF other aquatic organisms 1	34 (BCF; 24 h; Chlorella sp.)
BCF other aquatic organisms 2	240 (BCF; 5 h; Bacteria)
Log Pow	3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Benzenemethanol (100-51-6)	
Surface tension	0.04 N/m (20 °C)

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)	
Log Koc	log Koc,2.97; QSAR

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Log Koc	Koc,SRC PCKOCWIN v2.0; 20.98; QSAR; log Koc; 1.32; Calculated value

4-tert-butylphenol (98-54-4)	
Log Koc	log Koc,3.1; QSAR

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Collect all waste in suitable and labelled containers and dispose according to local legislation.

Sewage disposal recommendations : Do not allow product to reach sewage system.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3066 Paint, 8, II

UN-No.(DOT) : UN3066

Proper Shipping Name (DOT) : Paint

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive

Packing group (DOT) : II - Medium Danger

Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Benzenemethanol (100-51-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Tetraethylenepentamine (112-57-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Poly(m-xylylenediamine-alt-epichlorohydrin), diamine terminated (135470-04-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,3-bis(aminomethyl)benzene (1477-55-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Phenol-2-carboxylic acid (69-72-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4-tert-butylphenol (98-54-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Fatty acids, tall-oil, reaction products with tetraethylenepentamine (68953-36-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

Tetraethylenepentamine (112-57-2)
U.S. - New Jersey - Right to Know Hazardous Substance List

1,3-bis(aminomethyl)benzene (1477-55-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

(Cyclohexanemethanamine,5-amino-1,3,3-trimethyl-) (2855-13-2)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

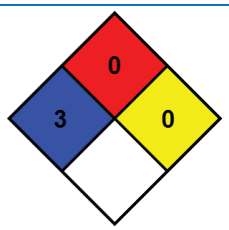
Full text of H-statements:

H300	Fatal if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H401	Toxic to aquatic life

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SAFETY DATA SHEET

GP3477B01

Section 1. Identification

Product name : Resuflor™ Aqua 3477 Epoxy Water Emulsion Primer/Sealer (Part B) Hardener

Product code : GP3477B01

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: 1-800-524-5979
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Do not breathe vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Section 2. Hazards identification

Response : Get medical advice or attention if you feel unwell. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Phenylmethanol	≤10	100-51-6
Acetic Acid	<3	64-19-7
3,6,9-triazaundecamethylenediamine	<1	112-57-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Phenylmethanol	100-51-6	**OARS WEEL (United States, 4/2022).** TWA: 10 ppm 8 hours.
Acetic Acid	64-19-7	**ACGIH TLV (United States, 1/2023).** TWA: 10 ppm 8 hours. TWA: 25 mg/m³ 8 hours. STEL: 15 ppm 15 minutes. STEL: 37 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2020).** TWA: 10 ppm 10 hours. TWA: 25 mg/m³ 10 hours. STEL: 15 ppm 15 minutes. STEL: 37 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 10 ppm 8 hours. TWA: 25 mg/m³ 8 hours.
3,6,9-triazaundecamethylenediamine	112-57-2	**OARS WEEL (United States, 4/2022).** **Absorbed through skin. Skin sensitizer.** TWA: 5 mg/m³ 8 hours.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Benzyl alcohol	100-51-6	**OARS WEEL (United States, 4/2022).** TWA: 10 ppm 8 hours.
Acetic acid	64-19-7	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 ppm 8 hours. 8 hrs OEL: 25 mg/m³ 8 hours. 15 min OEL: 37 mg/m³ 15 minutes. 15 min OEL: 15 ppm 15 minutes. **CA British Columbia Provincial (Canada, 6/2022).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Quebec Provincial (Canada, 6/2022).** TWAEV: 10 ppm 8 hours. TWAEV: 25 mg/m³ 8 hours. STEV: 15 ppm 15 minutes. STEV: 37 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 15 ppm 15 minutes.

Section 8. Exposure controls/personal protection

		TWA: 10 ppm 8 hours.
Tetraethylenepentamine	112-57-2	**OARS WEEL (United States, 4/2022). Absorbed through skin. Skin sensitizer.** TWA: 5 mg/m³ 8 hours.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
Acetic Acid	64-19-7	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes.

Biological exposure indices (United States)

No exposure indices known.

Biological exposure indices (Canada)

No exposure indices known.

Biological exposure indices (Mexico)

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : 8.5

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : 100°C (212°F)

Flash point : Closed cup: 104°C (219.2°F) [Pensky-Martens Closed Cup]

Evaporation rate : 0.97 (butyl acetate = 1)

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Lower: 1.3%
Upper: 19.3%

Vapor pressure : 2.3 kPa (17.5 mm Hg)

Relative vapor density : 1 [Air = 1]

Relative density : 1.03

Solubility(ies) :

Media	Result
cold water	Partially soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): >20.5 mm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Heat of combustion : 2.389 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Section 10. Stability and reactivity

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phenylmethanol	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1230 mg/kg	-
Acetic Acid	LC50 Inhalation Vapor	Rat	11000 mg/m³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-
3,6,9-triazaundecamethylenediamine	LD50 Oral	Rat	3990 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Phenylmethanol	Skin - Mild irritant	Man	-	48 hours 16 mg	-
	Skin - Moderate irritant	Pig	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 mg	-
Acetic Acid	Eyes - Mild irritant	Rabbit	-	0.5 minutes 5 mg	-
	Skin - Mild irritant	Human	-	24 hours 50 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 mg	-
	Skin - Severe irritant	Rabbit	-	525 mg	-
3,6,9-triazaundecamethylenediamine	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	5 mg	-
	Skin - Severe irritant	Rabbit	-	495 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 5 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Phenylmethanol	Category 3 Category 3	-	Respiratory tract irritation Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Phenylmethanol	Category 2	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	19036.21 mg/kg
Dermal	23318.34 mg/kg
Inhalation (vapors)	149.89 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Phenylmethanol	Acute LC50 10 ppm Fresh water	Fish - *Lepomis macrochirus*	96 hours
Acetic Acid	Acute EC50 73400 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - *Daphnia magna* - Neonate	48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - *Artemia salina*	48 hours
	Acute LC50 75000 µg/l Fresh water	Fish - *Lepomis macrochirus*	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Phenylmethanol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Acetic Acid	-	3.16	Low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.

Section 13. Disposal considerations

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

Not applicable.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

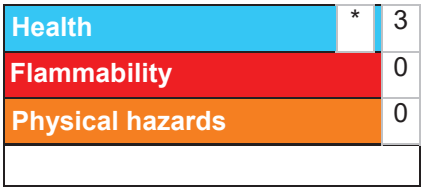
Not listed.

Section 15. Regulatory information

International lists : **Australia inventory (AIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

History

Date of printing : 9/13/2023

Date of issue/Date of revision : 9/13/2023

Date of previous issue : 6/10/2023

Version : 16

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

Poly-Crete Aggregate MD, SL, HF and TF/WR
SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier: Poly-Crete Aggregate MD, SL, HF and TF/WR

Recommended use: Floor Surfacing

Manufacturer Name: Dur-A-Flex, Inc.
95 Goodwin Street
East Hartford, CT 06108

Telephone number: 860-528-9838

Emergency phone number: 1-800- 424-9300 (CHEMTREC)

Date of Preparation: January 13, 2014

2. HAZARD(S) IDENTIFICATION

This product is one part of a 3 part product. Read and understand the hazard information on the SDS for Poly-Crete Resin and Poly-Crete Hardener before using this product.

Classification:

Physical	Health
Not Hazardous	Skin Irritation Category 2 Eye Damage Category 1 Skin Sensitization Category 1 Specific Target Organ Toxicity – Single Exposure Category 3 (Respiratory Irritation) Carcinogenicity Category 1A Specific Target Organ Toxicity – Repeat Exposure Category 1

Labeling:

Danger!

Hazard statement(s)

Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.

Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

May cause respiratory irritation.
May cause cancer by inhalation.
Causes damage to lungs through prolonged or repeated inhalation exposure.

Do not breathe dust, fume.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, protective clothing, eye protection or face protection.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER if you feel unwell.
IF exposed or concerned: Get medical attention.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Portland Cement	65997-15-1	5-95%
Crystalline Silica	14808-60-7	0-90%
Calcium Sulfate	7778-18-9	0-10%
Iron Oxide	1309-37-1	0-15%
Calcium Carbonate	1317-65-3	0-5%
Magnesium Oxide	1309-48-4	0-5%
Calcium Oxide	1305-78-8	0-5%
Calcium Hydroxide	1305-62-0	0-5%

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial ventilation. Get medical attention if irritation persists.
Skin contact: Remove contaminated clothing and launder before reuse. Wash skin with a cool water and pH-neutral soap. Get medical attention if irritation develops or persists.

Eye contact: Immediately flush eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get immediate medical attention.
Ingestion: If swallowed, drink 1 or 2 glasses of water to dilute. Never give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: Dust may cause eye and skin irritation or burns. Wet cement may cause eye and skin damage. May cause skin sensitization. Inhalation of dust may cause mucous membrane and respiratory irritation. Prolonged overexposure to respirable crystalline silica may cause lung disease (silicosis) and increase the risk of lung cancer. Risk of cancer depends on duration and level of exposure

Indication of immediate medical attention and special treatment, if necessary: If eye or skin burns occur, get immediate medical attention. For ingestion, get immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use media appropriate to the surrounding fire.

Specific hazards arising from the chemical: None known.

Special protective equipment and precautions for fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing as described in Section 8.

Environmental precautions: Report releases as required by local and federal authorities.

Methods and materials for containment and cleaning up: Collect using dustless method and place in appropriate container for use or disposal. Do not use compressed air.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with the eyes and skin. Do not breathe dust. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation and proper dust collection methods to keep exposure level below occupational exposure limits. Wash thoroughly with soap and water after use.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

Conditions for safe storage, including any incompatibilities: Keep dry until ready to use. Store in a cool, dry, well ventilated area away from incompatible materials. Protect from physical damage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Portland Cement	5 mg/m^3 TWA OSHA PEL 10 mg/m^3 TWA ACGIH TLV
Crystalline Silica	10 mg/m^3 TWA OSHA PEL (respirable fraction) % Silica + 2 0.025 mg/m3 TWA ACGIH TLV (respirable fraction)
Calcium Sulfate	5 mg/m^3 TWA OSHA PEL (respirable fraction) 10 mg/m^3 TWA OSHA PEL (total dust) 10 mg/m^3 TWA ACGIH TLV (inhalable fraction)
Iron Oxide	10 mg/m^3 TWA OSHA PEL (fume) 5 mg/m^3 TWA ACGIH TLV (respirable fraction)
Calcium Carbonate	5 mg/m^3 TWA OSHA PEL (respirable fraction) 10 mg/m^3 TWA OSHA PEL (total dust)
Magnesium Oxide	15 mg/m^3 TWA OSHA PEL (fume total particulate) 10 mg/m^3 TWA ACGIH TLV (inhalable fraction)
Calcium Oxide	5 mg/m^3 TWA OSHA PEL 2 mg/m^3 TWA ACGIH TLV
Calcium Hydroxide	5 mg/m^3 TWA OSHA PEL (respirable fraction) 10 mg/m^3 TWA OSHA PEL (total dust) 5 mg/m^3 TWA ACGIH TLV

Appropriate engineering controls: Use with adequate general or local exhaust ventilation to maintain exposures below the occupational exposure limits.

Individual protection measures, such as personal protective equipment:
Respiratory protection: If the exposure limits are exceeded a NIOSH approved particulate respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 or other applicable regulations and good industrial hygiene practice.
Skin protection: Alkali/abrasive resistant gloves are recommended to prevent skin contact.
Eye protection: Chemical safety goggles are recommended to prevent eye contact.
Other: Impervious clothing as needed to avoid skin contact and contamination of personal clothing. A safety shower and eye wash should be available in the immediate work area. If clothing becomes contaminated with dust or wet cement, remove immediately and launder before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Tan granular solid
Odor: No odor

Odor threshold: Not applicable	**pH:** Not available
Melting Point/Freezing Point: - Not available	**Boiling Point**: 4000°F / 2204°C
Flash point: Not flammable	**Evaporation rate:** Not applicable
Flammability (solid, gas): Not flammable or combustible	

Flammable limits: LEL: Not applicable	**UEL:** Not applicable
Vapor pressure: Not applicable	**Vapor density:** Not applicable
Relative density: >1	**Solubility(is):** Insoluble
Partition coefficient: n-Octanol/water: Not applicable	**Auto-ignition temperature:** Not applicable
Decomposition temperature: Not available	**Viscosity:** Not applicable

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.
Chemical stability: Stable.
Possibility of hazardous reactions: Crystalline silica will dissolve in hydrofluoric acid and produce silicone tetrafluoride.
Conditions to avoid: Unintentional contact with water will result in hydration and produce caustic calcium hydroxide.
Incompatible materials: Avoid contact with hydrofluoric acid and oxidizing agents.
Hazardous decomposition products: None known.

11. TOXICOLOGICAL INFORMATION

Inhalation: Inhalation of dust may cause irritation to the nose, throat and upper respiratory tract with coughing and shortness of breath.
Ingestion: Large amounts may cause gastrointestinal irritation or burns with nausea and diarrhea.
Skin contact: Contact with dry powder may cause drying of the skin and mild irritation. May cause mechanical irritation. Contact with wet cement may cause irritation with thickening, cracking and fissuring of the skin. Prolonged contact may cause skin burns. May cause allergic skin reaction.
Eye contact: Dust may cause irritation or redness with inflammation of the cornea. May cause mechanical irritation. Direct contact with wet cement or large amounts of dry powder may cause irritation or burns with possible blindness.

Chronic effects from short- and long-term exposure: Chronic inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function.

Reproductive Toxicity: None of the components greater than 0.1% have been shown to cause reproductive or developmental toxicity.

Sensitization: Portland cement may contain trace amounts of chromium salts or nickel compounds that have been shown to cause sensitization in humans.

Mutagenicity: None of the components greater than 0.1% have been shown to cause germ cell mutagenicity.

Carcinogenicity: Crystalline silica quartz is listed as “Carcinogenic to Humans” (Group 1) by IARC and “Known to be a Human Carcinogen" by NTP. None of the other components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

Acute Toxicity Values:
Portland Cement: No toxicity data available
Crystalline Silica, Quartz: Oral rat LD50 >22,500 mg/kg
Calcium Sulfate: Oral rat LD50 >1581 mg/kg; Inhalation rat LC50 > 2.61 mg/L/4 hr
Iron Oxide: Oral rat LD50 > 10000 mg/kg;
Calcium Carbonate: No toxicity data available
Magnesium Oxide: No toxicity data available
Calcium Oxide: Oral rat LD50 > 2000 mg/kg
Calcium Hydroxide: Oral rat LD50 > 2000 mg/kg; Dermal rabbit LD50 > 2500 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Portland Cement: No toxicity data available
Iron Oxide: 96 hr LC50 Brachydanio rerio 100000 mg/L: 48 hr EC50 daphnia magna >100 mg/L
Calcium Carbonate: No data available
Magnesium Oxide: No data available
Calcium Oxide: 96 hr LC50 Oncorhynchus mykiss 50.6 mg/L; 48 hr EC50 daphnia magna 49.1 mg/L; 72 hr EC50 Pseudokirchnerella subcapitata 184.57 mg/L
Crystalline Silica: 72 hr LC50 carp >10,000 mg/L
Calcium Hydroxide: 96 hr LC50 Gasterosteus aculeatus 457 mg/L; 48 hr EC50 daphnia magna 49.1 mg/L; 72 hr EC50 Pseudokirchnerella subcapitata 184.57 mg/L

Persistence and degradability: Biodegradation is not applicable to inorganic substances.
Bioaccumulative potential: Not expected to be bioaccumulative.
Mobility in soil: No data available.
Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	None	Not Regulated	None	None	None
TDG	None	Not Regulated	None	None	None
IMDG	None	Not Regulated	None	None	None
IATA	None	Not Regulated	None	None	None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None known

15. REGULATORY INFORMATION

CERCLA: This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health, Chronic Health

SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

California Proposition 65
This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): Crystalline silica, quartz (14808-60-7) 0-95% cancer, Titanium dioxide (13463-67-7) <0.08% (cancer)

EPA TSCA Inventory: All of the ingredients in this product are listed on the EPA TSCA Inventory.

CANADA:
Canadian WHMIS Classification: Class D Division 2A, Class D Division 2B
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

16. OTHER INFORMATION

NFPA Rating: Health = 3 Flammability = 0 Instability = 0
HMIS Rating: Health = 3* Flammability = 0 Physical Hazard = 0

SDS Revision History: All sections revised – Converted to GHS forma
Date of preparation: January 13, 2014
Date of last revision: New SDS

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, Dur-A-Flex, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND USE.

DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

Poly-Crete Hardener: MD, SL, HF, TF and NATURAL SL
SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier: Poly-Crete Hardener: MD, SL, HF, TF, and NATURAL SL
Product Code:

Recommended use: Floor Surfacing

Manufacturer Name: Dur-A-Flex, Inc.
95 Goodwin Street
East Hartford, CT 06108
Telephone number: 860-528-9838

Emergency phone number: 1-800- 424-9300 (CHEMTREC)

Date of Preparation: January 9, 2014

2. HAZARD(S) IDENTIFICATION

This product is one part of a 3 part product. Read and understand the hazard information on the SDS for Poly-Crete Resin before using this product.

Classification:

Physical	Health
Not Hazardous	Acute Toxicity Category 4 – Inhalation Eye Irritation Category 2 Skin Irritation Category 2 Skin Sensitization Category 1 Respiratory Sensitization Category 1 Specific Target Organ Toxicity – Single Exposure Category 3 (Respiratory Irritation) Specific Target Organ Toxicity – Repeat Exposure Category 2

Labeling:

Danger!

Hazard statement(s)

Harmful if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause damage to lungs through prolonged or repeated inhalation exposure.

Precautionary statement(s)

Do not breathe mist, vapors or spray.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wash thoroughly after handling.
Wear protective gloves, eye protection and face protection.
In case of inadequate ventilation wear respiratory protection.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER if you feel unwell.
Get medical attention if you feel unwell.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
4,4'-Diphenylmethane diisocyanate	101-68-8	40-60%
Polyisocyanate based on MDI	Proprietary	40-60%

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Inhalation: Immediately remove to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention**.** Asthma-like symptoms may develop immediately or delayed up to several hours.
Skin contact: Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. If rash or irritation develops, get medical attention. Launder clothing before re-use.
Eye contact: Immediately flush with large quantities of water for 15 minutes, holding the eyelids apart. Get medical attention if irritation develops.
Ingestion: If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. DO NOT INDUCE VOMITING. Get medical attention.

Most important symptoms/effects, acute and delayed: Irritating to eyes, skin and respiratory system. May cause allergic skin and respiratory reaction. If an allergic respiratory reaction occurs, get immediate medical attention. Symptoms may be delayed. Individuals sensitized to isocyanates may have a life-threatening allergic reaction.

Indication of immediate medical attention and special treatment, if necessary: If skin or respiratory sensitization occurs, get immediate medical attention. Symptoms may be delayed for several hours after exposure. Respiratory sensitization may be life threatening.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use foam, carbon dioxide and dry chemical. Cool fire exposed containers with water.

Specific hazards arising from the chemical: This product reacts with water producing heat and gases. Reaction may be violent. Closed containers may rupture when exposed to extreme heat or contaminated with water. Combustion may produce isocyanate vapors and other irritating, highly toxic gases. Exposure to heated diisocyanates can be extremely dangerous.

Special protective equipment and precautions for fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Do not allow run-off from fire fighting to enter drains or water courses. Decontaminate equipment and protective clothing before reuse.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing as described in Section 8. Isolate the area and prevent access. Ventilate and remove ignition sources.

Methods and materials for containment and cleaning up: Contain and collect with an inert absorbent. Neutralize with a decontamination solution made up of 90% water and 10% concentrated ammonia and 2% detergent. Use a 10 to 1 ratio. Wait 15 minutes. Collect into a suitable container. Repeat until the surface is completely decontaminated. Cover loosely with lid and allow container to vent for 48 hours to allow carbon dioxide to escape.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not breathe vapors or mists. Use only with adequate ventilation. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties are not adequate to prevent overexposure from inhalation. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating.

Conditions for safe storage, including any incompatibilities: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Protect from physical damage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

4,4'-Diphenylmethane diisocyanate	00.005 ppm TWA ACGIH TLV 0.02 ppm Ceiling OSHA PEL
Polyisocyanate based on MDI	None Established

Appropriate engineering controls: Use with adequate general or local exhaust ventilation to maintain exposures below the occupational exposure limits.

Personal Protective Equipment:
Respiratory protection: If the exposure limits are exceeded or if exposure levels are unknown, a NIOSH approved positive pressure air supplied respirator with a full facepiece or air supplied hood should be used. In some situations where exposure levels are known to be below 10 times the exposure limit an air purifying respirator (organic vapor with particulate prefilter) can be used. A change schedule for cartridges is required. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.
Skin protection: Wear impervious gloves such as neoprene or butyl rubber.
Eye protection: Chemical safety goggles recommended.
Other: Impervious clothing as needed to prevent contact. A safety shower and eye wash should be available in the immediate work area.
Medical Surveillance: A pre-placement physical should be given to all employees that will work with isocyanates. Employees with a prior isocyanate sensitization should be excluded from working with this product. A history of adult asthma, eczema and respiratory allergies are possible reasons for excluding or restricting the employee from working with this product. A comprehensive annual medical surveillance program should be instituted for all employees who work with isocyanates. Once a worker has been diagnosed as sensitized, no further exposure can be permitted.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Dark amber liquid
Odor: Faint aromatic odor

Odor threshold: 0.384 (MDI)	**pH:** Not applicable
Melting Point/Freezing Point: Not available	**Boiling Point:** 392°F / 200°C
Flash point: >392 °F / >200°C	**Evaporation rate:** Not available
Flammability (solid, gas): Not flammable	
Flammable limits: LEL: Not applicable	**UEL:** Not applicable
Vapor pressure: 0.00001 mmHg @25°C	**Vapor density:** 8.5
Relative density: 1.24	**Solubility(is):** Reacts in Water
Partition coefficient: n-Octanol/water: Not available	**Auto-ignition temperature:** Not available
Decomposition temperature: Not available	**Viscosity:** 35 mPas@25°C

10. STABILITY AND REACTIVITY

Reactivity: None known.

Chemical stability: Stable
Possibility of hazardous reactions: Contact with water or temperature greater than 400°F may cause polymerization.
Conditions to avoid: Avoid contact with heat, sparks and flames. Protect from freezing.
Incompatible materials: Avoid contact with water, alcohols, amines, acids and strong bases**.** May damage plastics and rubber.
Hazardous decomposition products: Thermal decomposition may produce carbon and nitrogen oxides, hydrogen cyanide and aromatic isocyanates.

11. TOXICOLOGICAL INFORMATION

Inhalation: Inhalation of vapors or mists may cause mucous membrane and respiratory irritation. 4,4'-Diphenylmethane diisocyanate has been shown to cause respiratory sensitization. Symptoms include dryness of the throat, tightness of chest and difficulty in breathing. Symptoms may be delayed for several hours after exposure. This product can produce asthmatic sensitization upon a single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. The allergic respiratory reaction may be life threatening.
Ingestion: Swallowing may cause gastrointestinal irritation abdominal pain, nausea, vomiting and diarrhea.
Skin contact: Skin contact may cause irritation with redness, itching and swelling. May cause allergic skin reaction. 4,4'-Diphenylmethane diisocyanate has been shown to be irritating to rabbit skin. Animal tests have indicated that respiratory sensitization can result from skin contact with isocyanates.
Eye contact: May cause irritation with redness, tearing, stinging and swelling. 4,4'-Diphenylmethane diisocyanate has been shown to cause irritation to rabbit eyes.

Chronic effects from short- and long-term exposure: Prolonged exposure to 4,4'-diphenylmethane diisocyanate may cause chronic irritation, decreased lung function and lung damage and conjunctivitis. 4,4'-Diphenylmethane has been shown to cause damage to the olfactory epithelium after repeated inhalation in a repeat dose study in rats.

Reproductive Toxicity: 4,4'-Diphenylmethane diisocyanate has been shown to cause developmental toxicity only at doses that were maternally toxic.

Sensitization: 4,4'-Diphenylmethane diisocyanate has been shown to cause sensitization in a skin sensitization study with guinea pigs.

Mutagenicity: 4,4'-Diphenylmethane diisocyanate was negative the in the AMES test (with/without metabolic activation) and in an in vivo micronucleus assay.

Carcinogenicity: None of the other components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

Acute Toxicity Values:
4,4'-Diphenylmethane diisocyanate: Oral rat LD50 >2,000 mg/kg; Inhalation rat LC10 > 2.24 mg/L/1 hr; Dermal rabbit LD50 >9,400 mg/kg.
Polyisocyanate based on MDI: No acute toxicity data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
4,4'-Diphenylmethane diisocyanate: 96 hr LC50 Oryzias latipes > 3000 mg/L; 48 hr EC50 daphnia magna 129.7 mg/L; 72 hr EC50 Desmodesmus subspicatus > 1640 mg/L (structurally similar chemical)
Polyisocyanate based on MDI: No data available

Persistence and degradability: 4,4'-Diphenylmethane diisocyanate is not readily biodegradable.
Bioaccumulative potential: 4,4'-Diphenylmethane diisocyanate has a calculated BCF of 200.
Mobility in soil: No data available.
Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations. Incineration is the preferred method.

14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	None	Not Regulated	None	None	None
TDG	None	Not Regulated	None	None	None
IMDG	None	Not Regulated	None	None	None
IATA	None	Not Regulated	None	None	None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions:

15. REGULATORY INFORMATION

CERCLA: This product has a Reportable Quantity (RQ) of 10,000 lbs. based on the RQ for 4,4'-Diphenylmethane diisocyanate of 5,000 lbs. Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under applicable federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health, Chronic Health

SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

California Proposition 65
This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None

EPA TSCA Inventory: All of the ingredients in this product are listed on the EPA TSCA Inventory.

CANADA:
Canadian CEPA: All of the ingredients in this product are listed on the Canadian DSL.
Canadian WHMIS Classification: Class D Division 2 Subdivision A (Very Toxic Material Causing other Toxic Effects), Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

16. OTHER INFORMATION

NFPA Rating: Health = 2 Flammability = 1 Instability = 1
HMIS Rating: Health = 2* Flammability = 1 Physical Hazard = 1

SDS Revision History: Converted to GHS format. All sections revised.
Date of preparation: January 9, 2014
Date of last revision: New SDS

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DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

Poly-Crete HF, MD, SL, TF/WR, & NATURAL SL Resin
SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier: Poly-Crete HF, MD, SL, TF/WR, & NATURAL SL Resin
Product Code:

Recommended use: Floor Surfacing

Manufacturer Name: Dur-A-Flex, Inc.
95 Goodwin Street
East Hartford, CT 06108
Telephone number: 860-528-9838

Emergency phone number: 1-800- 424-9300 (CHEMTREC)

Date of Preparation: January 30, 2014

2. HAZARD(S) IDENTIFICATION

This product is one part of a 3 part product. Read and understand the hazard information on the SDS for Poly-Crete Hardener and Poly-Crete Aggregate before using this product.

Classification:

Physical	Health
Not Hazardous	Specific Target Organ Toxicity – Repeat Exposure Category 2

Labeling:

Warning!

Hazard statement(s)

May cause damage to kidneys through prolonged or repeated exposure.

Precautionary statement(s)

Do not breathe mist, vapors or spray.
Get medical attention if you feel unwell.
Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Polyester-Ether Polyol Blend	Mixture	1-15%
Diethylene Glycol	111-46-6	1-5%
Titanium Dioxide	13463-67-7	1-5%
Carbon Black	1333-86-4	<1%

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Inhalation: Remove victim to fresh air. If irritation occurs or breathing is difficult, get medical attention.
Skin contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Eye contact: Flush with large quantities of water, holding the eyelids apart. Get medical attention if irritation persists.
Ingestion: If conscious, rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

Most important symptoms/effects, acute and delayed: Prolonged overexposure to diethylene glycol may cause kidney damage.

Indication of immediate medical attention and special treatment, if necessary: None expected under normal conditions of use. If large amounts are swallowed, get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use water spray, foam, carbon dioxide or dry chemical. Cool fire exposed containers with water.

Specific hazards arising from the chemical: Combustion may produce carbon oxides.

Special protective equipment and precautions for fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing as described in Section 8.

Environmental precautions: Avoid release to the environment. Report releases as required by local, state and federal authorities.

Methods and materials for containment and cleaning up: Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Caution slip hazard. Wash spill site with soap and water.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Wash thoroughly after handling and before eating, drinking, smoking or using the toilet. Use with adequate ventilation.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from physical damage. Store away from oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Polyol Blend	None Established
Diethylene Glycol	10 mg/m3 TWA AIHA WEEL
Titanium Dioxide	15 mg/m3 TWA OSHA PEL (total dust) 10 mg/m3 TWA ACGIH TLV
Carbon Black	3.5 mg/m3 TWA OSHA PEL 3 mg/m3 TWA ACGIH TLV (inhalable)

Appropriate engineering controls: Use with adequate general or local exhaust ventilation to maintain exposures below occupational exposure limits.

Personal Protective Equipment:
Respiratory protection: If the exposures are excessive, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.
Skin protection: Wear impervious gloves such as nitrile or butyl rubber.
Eye protection: Chemical safety goggles recommended.
Other: Impervious clothing as needed to prevent contact. An eye wash should be available in the immediate work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Colored, viscous liquid
Odor: Faint aromatic odor

Odor threshold: Not available	**pH:** Not available
Melting Point/Freezing Point: - Not available	**Boiling Point:** 212°F / 100°C
Flash point: 540 °F / 282.2°C	**Evaporation rate:** <1 (butyl acetate = 1)
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: Not applicable	**UEL:** Not applicable

Vapor pressure: Not available	**Vapor density:** >1
Relative density: >1	**Solubility:** Dispersible in water
Partition coefficient: n-Octanol/water: Not available	**Auto-ignition temperature:** Not available
Decomposition temperature: Not available	**Viscosity:** Not available

10. STABILITY AND REACTIVITY

Reactivity: None known.
Chemical stability: Stable
Possibility of hazardous reactions: None known.
Conditions to avoid: Avoid excessive heat.
Incompatible materials: Avoid contact with oxidizing agents.
Hazardous decomposition products: Thermal decomposition may produce carbon oxides.

11. TOXICOLOGICAL INFORMATION

Inhalation: Excessive inhalation of mists may cause mucous membrane and upper respiratory tract irritation.
Ingestion: Swallowing may cause gastrointestinal irritation, nausea and diarrhea.
Skin contact: Prolonged skin contact may cause irritation.
Eye contact: May cause irritation with redness and tearing.

Chronic effects from short- and long-term exposure: Prolonged overexposure to diethylene glycol has been shown to cause kidney damage in animal studies.

Reproductive Toxicity: This product is not expected to cause adverse reproductive or developmental effects.

Sensitization: None of the components have been shown to cause sensitization in humans or animals. .

Mutagenicity: This product is not expected to cause mutagenic activity.

Carcinogenicity: Carbon black is listed as "Possibly Carcinogenic to Humans" (Group 2B) by IARC. Carbon black is inextricably bound in a polymer matrix and no exposure occurs during use.

Acute Toxicity Values:
Polyol Blend: No toxicity data available.
Diethylene glycol: Oral rat LD50 12,565 mg/kg; Dermal rabbit LD50 11,890 mg/kg
Titanium Dioxide: Oral rat LD50 >5000 mg/kg; Inhalation rat LC50 > 6.82 mg/L /4 hr
Carbon Black: Oral rat LD50 >8000 mg/kg; Inhalation rat LC50 > 4.6 mg/m³/4 hr

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Polyol Blend: No data available
Diethylene glycol: 96 hr LC50 Lepomis macrochirus 1000 mg/L;
Titanium Dioxide: 72 hr EC50 Pseudokirchnerella subcapitata 61 mg/L

Carbon Black: 96 hr Danio rerio LC0 1000 mg/L; 24 hr EC50 daphnia magna >5600 mg/L; 72 hr EC50 >10000 mg/L

Persistence and degradability: Biodegradation is not applicable to inorganic substances such as carbon black and titanium dioxide. Diethylene glycol is readily biodegradable.
Bioaccumulative potential: Diethylene glycol has a BCF of 3. .
Mobility in soil: Diethylene glycol has a high mobility in soil.
Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	None	Not Regulated	None	None	None
TDG	None	Not Regulated	None	None	None
IMDG	None	Not Regulated	None	None	None
IATA	None	Not Regulated	None	None	None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions:

15. REGULATORY INFORMATION

CERCLA: This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health

SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

California Proposition 65
This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): Toluene 108-88-3 (developmental, female reproductive toxicity) <1 ppm, Benzene (71-43-2) (cancer, developmental, male reproductive toxicity) <1 ppm, Ethylbenzene (100-41-4) (cancer) <1 ppm (carbon black, crystalline silica and titanium dioxide are inextricably bound).

EPA TSCA Inventory: All of the ingredients in this product are listed on the EPA TSCA Inventory.

CANADA:
Canadian WHMIS Classification: Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)
This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

16. OTHER INFORMATION

NFPA Rating: Health = 1 Flammability = 1 Instability = 0
HMIS Rating: Health = 1 Flammability = 1 Physical Hazard = 0

SDS Revision History: Converted to GHS format. All sections revised
Date of preparation: January 30, 2014
Date of last revision: New SDS

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SAFETY DATA SHEET

GP4641A01

Section 1. Identification

Product name : Resutile™ HPS 100 (Part A)
Clear

Product code : GP4641A01

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: 1-800-524-5979
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.

Precautionary statements

Section 2. Hazards identification

Prevention : Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS. VAPOR AND SPRAY MIST HARMFUL. Gives off harmful vapor of solvents and isocyanates. DO NOT USE IF YOU HAVE CHRONIC (LONG-TERM) LUNG OR BREATHING PROBLEMS, OR IF YOU HAVE EVER HAD A REACTION TO ISOCYANATES. USE ONLY WITH ADEQUATE VENTILATION. WHERE OVERSPRAY IS PRESENT, A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR (NIOSH approved) SHOULD BE WORN TO PREVENT EXPOSURE. IF UNAVAILABLE, AN APPROPRIATE PROPERLY FITTED APPROVED NIOSH VAPOR/PARTICULATE RESPIRATOR MAY BE EFFECTIVE. Follow directions for respirator use. Wear the respirator for the whole time of spraying and until all vapors and mists are gone. If you have any breathing problems during use, LEAVE THE AREA and get fresh air. If problems remain or happen later, IMMEDIATELY call a doctor - If not available get emergency medical treatment. Have this label with you. Reacts with water in closed container to produce pressure which may cause container to burst.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Hexamethylene Diisocyanate Polymer	≥90	28182-81-2
Hexamethylene Diisocyanate (max.)	≤0.3	822-06-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Hexamethylene Diisocyanate Polymer Hexamethylene Diisocyanate (max.)	28182-81-2 822-06-0	None. **ACGIH TLV (United States, 1/2023).** TWA: 0.005 ppm 8 hours. TWA: 0.03 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 0.005 ppm 10 hours. TWA: 0.035 mg/m³ 10 hours. CEIL: 0.02 ppm 10 minutes. CEIL: 0.14 mg/m³ 10 minutes.

Occupational exposure limits (Canada)

Section 8. Exposure controls/personal protection

Ingredient name	CAS #	Exposure limits
Hexamethylene Diisocyanate Polymer	28182-81-2	**CA Quebec Provincial (Canada, 6/2022). [Isocyanate oligomers] Skin sensitizer. Inhalation sensitizer.**
Hexamethylene diisocyanate	822-06-0	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 0.005 ppm 8 hours. 8 hrs OEL: 0.03 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 6/2022). Inhalation sensitizer.** TWA: 0.005 ppm 8 hours. C: 0.01 ppm **CA Quebec Provincial (Canada, 6/2022). Skin sensitizer. Inhalation sensitizer.** TWAEV: 0.005 ppm 8 hours. TWAEV: 0.034 mg/m³ 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 0.015 ppm 15 minutes. TWA: 0.005 ppm 8 hours. **CA Ontario Provincial (Canada, 6/2019). [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm TWA: 0.005 ppm 8 hours.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
None.		

Biological exposure indices (United States)

Ingredient name	Exposure indices
Hexamethylene Diisocyanate (max.)	**ACGIH BEI (United States, 1/2023)** BEI: 15 µg/g creatinine, 1,6-hexamethylene diamine [in urine]. Sampling time: end of shift.

Biological exposure indices (Canada)

No exposure indices known.

Biological exposure indices (Mexico)

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: 166°C (330.8°F) [Pensky-Martens Closed Cup]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure : Not available.

Relative vapor density : Not available.

Relative density : 1.15

Solubility(ies) :

Section 9. Physical and chemical properties

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): >20.5 mm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Heat of combustion : 0.087 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene Diisocyanate Polymer	LC50 Inhalation Dusts and mists	Rat	18500 mg/m^3	1 hours
Hexamethylene Diisocyanate (max.)	LC50 Inhalation Dusts and mists	Rat	124 mg/m^3	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hexamethylene Diisocyanate Polymer	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Section 11. Toxicological information

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Hexamethylene Diisocyanate Polymer	Category 3	-	Respiratory tract irritation
Hexamethylene Diisocyanate (max.)	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	4.63 mg/l

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Hexamethylene Diisocyanate Polymer	-	367.7	Low
Hexamethylene Diisocyanate (max.)	-	57.63	Low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been

Section 13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

Not applicable.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

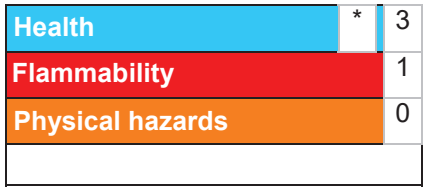
Not listed.

Section 15. Regulatory information

International lists : **Australia inventory (AIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method

History

Date of printing : 9/28/2023

Date of issue/Date of revision : 9/28/2023

Date of previous issue : 6/19/2023

Version : 6

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group

Section 16. Other information

UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

GP4641B01

Section 1. Identification

Product name : Resutile™ HPS 100 (Part B)
Hardener

Product code : GP4641B01

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: 1-800-524-5979
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 8% (oral), 94.2% (dermal), 94.2% (inhalation)

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Section 2. Hazards identification

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Do not breathe vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
4-Methyl-1,3-dioxolan-2-one	≥25 - ≤50	108-32-7
Methyl Ethyl Oxazolidineethanol Carbonate	≤10	145899-78-1
Light Aromatic Hydrocarbons	≤3	64742-95-6
Dibutyltin Dilaurate	<1	77-58-7
trimethylbenzene	<1	25551-13-7
1,3,5-Trimethylbenzene	≤0.3	108-67-8
1,2,4-Trimethylbenzene	≤0.3	95-63-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
4-Methyl-1,3-dioxolan-2-one	108-32-7	None.
Methyl Ethyl Oxazolidineethanol Carbonate	145899-78-1	None.
Light Aromatic Hydrocarbons	64742-95-6	None.
Dibutyltin Dilaurate	77-58-7	**ACGIH TLV (United States, 1/2023). [Tin, organic compounds as Sn] Absorbed through skin.** TWA: 0.1 mg/m³, (as Sn) 8 hours. STEL: 0.2 mg/m³, (as Sn) 15 minutes. **NIOSH REL (United States, 10/2020). [tin**

Section 8. Exposure controls/personal protection

		organic compounds as Sn] Absorbed through skin. TWA: 0.1 mg/m³, (as Sn) 10 hours. **OSHA PEL (United States, 5/2018). [Tin, organic compounds (as Sn)]** TWA: 0.1 mg/m³, (as Sn) 8 hours.
trimethylbenzene	25551-13-7	**ACGIH TLV (United States, 1/2023). [trimethyl benzene, isomers]** TWA: 10 ppm 8 hours.
1,3,5-Trimethylbenzene	108-67-8	**ACGIH TLV (United States, 1/2023). [trimethyl benzene, isomers]** TWA: 10 ppm 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours.
1,2,4-Trimethylbenzene	95-63-6	**NIOSH REL (United States, 10/2020).** TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours. **ACGIH TLV (United States, 1/2023).** TWA: 10 ppm 8 hours.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
None.		

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
Dibutyltin Dilaurate	77-58-7	**NOM-010-STPS-2014 (Mexico, 4/2016). [Tin, organic compounds] Absorbed through skin.** TWA: 0.1 mg/m³, (as Sn) 8 hours. STEL: 0.2 mg/m³, (as Sn) 15 minutes.

Biological exposure indices (United States)

No exposure indices known.

Biological exposure indices (Canada)

No exposure indices known.

Biological exposure indices (Mexico)

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : 153°C (307.4°F)

Flash point : Closed cup: 94°C (201.2°F) [Pensky-Martens Closed Cup]

Evaporation rate : 0.23 (butyl acetate = 1)

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Lower: 0.7%
Upper: 21%

Vapor pressure : 0.51 kPa (3.8 mm Hg)

Relative vapor density : 3.5 [Air = 1]

Relative density : 1.14

Solubility(ies) :

Section 9. Physical and chemical properties

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): >20.5 mm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Heat of combustion : 42.538 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-Methyl-1,3-dioxolan-2-one	LD50 Oral	Rat	>5000 mg/kg	-
Light Aromatic Hydrocarbons	LD50 Oral	Rat	8400 mg/kg	-
Dibutyltin Dilaurate	LD50 Oral	Rat	2071 mg/kg	-
trimethylbenzene	LD50 Oral	Rat	8970 mg/kg	-
1,3,5-Trimethylbenzene	LC50 Inhalation Vapor	Rat	24000 mg/m^3	4 hours
	LD50 Oral	Rat	5000 mg/kg	-
1,2,4-Trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m^3	4 hours
	LD50 Oral	Rat	5 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4-Methyl-1,3-dioxolan-2-one	Eyes - Moderate irritant	Rabbit	-	60 mg	-
	Skin - Moderate irritant	Human	-	72 hours 100 mg l	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
Light Aromatic Hydrocarbons	Eyes - Mild irritant	Rabbit	-	24 hours 100 uL	-
Dibutyltin Dilaurate	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Severe irritant	Rabbit	-	500 mg	-

Section 11. Toxicological information

trimethylbenzene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
1,3,5-Trimethylbenzene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Light Aromatic Hydrocarbons	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
Dibutyltin Dilaurate	Category 1	-	-
1,3,5-Trimethylbenzene	Category 3	-	Respiratory tract irritation
1,2,4-Trimethylbenzene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Light Aromatic Hydrocarbons	Category 2	-	-
Dibutyltin Dilaurate	Category 1	oral	-

Aspiration hazard

Name	Result
Light Aromatic Hydrocarbons	ASPIRATION HAZARD - Category 1
trimethylbenzene	ASPIRATION HAZARD - Category 1
1,3,5-Trimethylbenzene	ASPIRATION HAZARD - Category 1
1,2,4-Trimethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	6927.2 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Dibutyltin Dilaurate	Chronic EC10 >2 mg/l Fresh water	Algae - *Desmodesmus subspicatus*	96 hours
trimethylbenzene	Acute LC50 5600 µg/l Marine water	Crustaceans - *Palaemonetes pugio*	48 hours
1,3,5-Trimethylbenzene	Acute LC50 13000 µg/l Marine water	Crustaceans - *Cancer magister* - Zoea	48 hours
	Acute LC50 12520 µg/l Fresh water	Fish - *Carassius auratus*	96 hours
	Chronic NOEC 0.4 mg/l Fresh water	Daphnia - *Daphnia magna*	21 days
1,2,4-Trimethylbenzene	Acute LC50 4910 µg/l Marine water	Crustaceans - *Elasmopus pectenicrus* - Adult	48 hours
	Acute LC50 7720 µg/l Fresh water	Fish - *Pimephales promelas*	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Light Aromatic Hydrocarbons	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Light Aromatic Hydrocarbons	-	10 to 2500	High
Dibutyltin Dilaurate	-	2.91	Low
1,3,5-Trimethylbenzene	-	161	Low
1,2,4-Trimethylbenzene	-	243	Low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

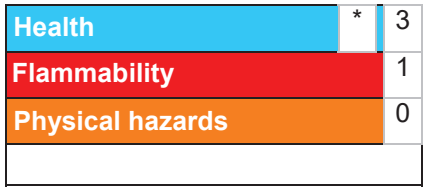
Not listed.

Section 15. Regulatory information

International lists : **Australia inventory (AIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
TOXIC TO REPRODUCTION - Category 1B	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

History

Date of printing : 9/9/2023

Date of issue/Date of revision : 9/9/2023

Date of previous issue : 6/19/2023

Version : 6

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Section 16. Other information

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

GP3521A01

Section 1. Identification

Product name : Resuflor™ 3521 Epoxy Primer/Binder (Part A)
Clear

Product code : GP3521A01

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: 1-800-524-5979
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Section 2. Hazards identification

Response : Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : DANGER: Rags, steel wool, other waste soaked with this product, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled, metal container. Dispose of in accordance with local fire regulations.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Epoxy Polymer	≥75 - ≤90	1675-54-3
Alkyl Glycidyl Ether	≥10 - ≤25	17557-23-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Epoxy Polymer Alkyl Glycidyl Ether	1675-54-3 17557-23-2	None. None.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
None.		

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
None.		

Biological exposure indices (United States)

No exposure indices known.

Biological exposure indices (Canada)

No exposure indices known.

Biological exposure indices (Mexico)

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: 116°C (240.8°F) [Pensky-Martens Closed Cup]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure : Not available.

Relative vapor density : Not available.

Relative density : 1.12

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): >20.5 mm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Heat of combustion : 9.62 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Epoxy Polymer Alkyl Glycidyl Ether	LD50 Dermal LD50 Oral	Rabbit Rat	20 g/kg 4500 mg/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Epoxy Polymer	Eyes - Severe irritant Skin - Mild irritant	Rabbit Rabbit	- -	24 hours 2 mg 500 mg	- -

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Epoxy Polymer	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	43333.25 mg/kg

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

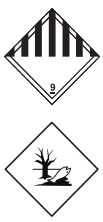
Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	Not regulated.	Not regulated.	Not regulated.	UN3082	UN3082
UN proper shipping name	-	-	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Polymer)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Polymer). Marine pollutant (Epoxy Polymer)
Transport hazard class(es)	-	-	-	9 	9 

Section 14. Transport information

Packing group	-	-	-	III	III
Environmental hazards	No.	No.	No.	Yes.	Yes.
Additional information	-	-	-	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Emergency schedules** F-A, S-F

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

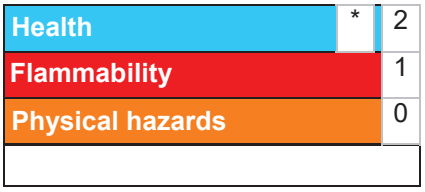
Not listed.

Section 15. Regulatory information

International lists : **Australia inventory (AIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1	Calculation method Calculation method Calculation method

History

Date of printing : 9/14/2023

Date of issue/Date of revision : 9/14/2023

Date of previous issue : 6/10/2023

Version : 16

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

GP3521B01

Section 1. Identification

Product name : Resuflor™ 3521 Epoxy Primer/Binder (Part B) Hardener

Product code : GP3521B01

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: 1-800-524-5979
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 1C
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 53.5% (dermal), 62.5% (inhalation)

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Harmful if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Wear protective gloves, protective clothing and eye or face protection. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Amino Polymer	≥50 - ≤75	135108-88-2
Phenylmethanol	≥25 - ≤41	100-51-6
2,4,6-tris(dimethylaminomethyl)phenol	≤10	90-72-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Section 4. First aid measures

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS B	Exposure limits
Amino Polymer	135108-88-2	None.
Phenylmethanol	100-51-6	**OARS WEEL (United States, 4/2#22).** TWA: 10 ppm 8 hours.
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	None.

Occupational exposure limits (Canada)

Ingredient name	CAS B	Exposure limits
Benzyl alcohol	100-51-6	**OARS WEEL (United States, 4/2#22).** TWA: 10 ppm 8 hours.

Occupational exposure limits (Mexico)

	CAS B	Exposure limits
None.		

Section 8. Exposure controls/personal protection

9iological exposure indices (United States)

No exposure indices known.

9iological exposure indices (Canada)

No exposure indices known.

9iological exposure indices (Mexico)

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

9ody protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section V. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : Not available.

9 oiling point, initial boiling point, and boiling range : 202°C (395.6°F)

Flash point : Closed cup: 116°C (240.8°F) [Pensky-Martens Closed Cup]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Lower: 1.3%
Upper: 13%

0 apor pressure : 0.02 kPa (0.15 mm Hg)

Relative vapor density : 3.72 [Air = 1]

Relative density : 1.02

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

0 iscosity : Kinematic (40°C (104°F)): >20.5 mm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Heat of combustion : 16.893 kJ/g

Section 1#. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phenylmethanol	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1230 mg/kg	-
2,4,6-tris (dimethylaminomethyl)phenol	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Phenylmethanol	Skin - Mild irritant	Man	-	48 hours 16 mg	-
	Skin - Moderate irritant	Pig	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 mg	-
2,4,6-tris (dimethylaminomethyl)phenol	Eyes - Severe irritant	Rabbit	-	24 hours 50 ug	-
	Skin - Mild irritant	Rat	-	0.025 Ml	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Severe irritant	Rat	-	0.25 Ml	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Phenylmethanol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Amino Polymer	Category 2	oral	-
Phenylmethanol	Category 2	-	-

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Section 11. Toxicological information

Acute toxicity estimates

Route	ATE value
Oral Dermal Inhalation (vapors)	689.71 mg/kg 1803.64 mg/kg 11 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Phenylmethanol	Acute LC50 10 ppm Fresh water	Fish - *Lepomis macrochirus*	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	9 iodegradability
Phenylmethanol	-	-	Readily

9 ioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN3066	UN3066	UN3066	UN3066	UN3066
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	8 	8 	8 	8 	8 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.
Additional information	- **ERG No.** 153	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8). **ERG No.** 153	- **ERG No.** 153	-	**Emergency schedules** F-A, S-B

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

Not applicable.

International regulations

Montreal Protocol

Section 15. Regulatory information

Not listed.

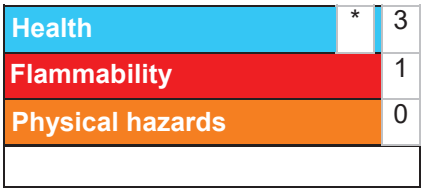
Stockholm Convention on Persistent Organic Pollutants

Not listed.

International lists : **Australia inventory (AIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a #-4 rating scale, with # representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 2V CFR 1V1#.12##, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 1C	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

History

Date of printing : 9/14/2023

Date of issue/Date of revision : 9/14/2023

Date of previous issue : 6/30/2023

Version : 14

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

Attachment A.28 WARRANTY (COMMERCIAL)

Industrial Floor Systems, Inc.

Warranty

Industrial Floor Systems, Inc. warrants this project for a period of one year from the date of completion of the installation. This warranty includes lifting or peeling of the finished system from the existing floor. This warranty is based on the integrity of the existing substrate and is contingent upon proper placement of a vapor barrier. This warranty is offered in conjunction with, and is therefore limited to, the terms and conditions defined by the product manufacturer. Warranty requires that the floor be properly maintained as defined by the manufacturer's literature. This warranty does not include delamination due to excess abuse, hydrostatic pressure, substrate shifting, moving or cracking, or joint movement. This warranty covers product and installation failures only and excludes any normal wear and tear conditions of the topcoat such as scratching or discoloration of the epoxy, and abuse creating cracks, spalls, or delamination. Industrial Floor Systems, Inc. is not responsible for any events resulting in civil liability such as slips or falls on floors. Customer shall maintain quality control and production records to assist in evaluating this Limited Warranty. Records shall be retained for the Warranty Period of one year.

Price:

Industrial Floor Systems, Inc.
Virginia Tech-Zone 8

ATTACHMENT C
PRICE SCHEDULE (To be completed by offeror. See instructions for completion in Section VII, 2)

Item #	Description of flooring	Qty	Price per SF	Extended Price
1a	Epoxy	1000	$8.05	$8,050.00
1b	Epoxy w/ 4” Epoxy wall base	1000	$9.14	$9,139.00
1c	Epoxy	2000	$6.08	$12,160.00
1d	Epoxy w/ 4” Epoxy wall base	2000	$6.87	$13,735.00
1e	Epoxy	3000	$5.41	$16,230.00
1f	Epoxy w/ 4” Epoxy wall base	3000	$6.06	$18,174.00
2a	Urethane 3/16”	1000	$22.96	$22,960.00
2b	Urethane 3/16” w/ 4” urethane Wall base	1000	$24.05	$24,049.00
2c	Urethane 3/16”	2000	$20.00	$40,000.00
2d	Urethane 3/16” w/ 4” urethane Wall base	2000	$20.79	$41,575.00
2e	Urethane 3/16”	3000	$19.01	$57,030.00
2f	Urethane 3/16” w/ 4” urethane Wall base	3000	$19.66	$58,974.00
3a	Epoxy Flake Single Broadcast	1000	$18.50	$18,500.00
3b	Epoxy Flake Single Broadcast w/ 4” Epoxy wall base	1000	$19.59	$19,589.00
3c	Epoxy Flake Single Broadcast	2000	$14.87	$29,740.00
3d	Epoxy Flake Single Broadcast w/ 4” Epoxy wall base	2000	$15.66	$31,315.00
3e	Epoxy Flake Single Broadcast	3000	$13.01	$39,030.00
3f	Epoxy Flake Single Broadcast w/ 4” Epoxy wall base	3000	$13.66	$40,974.00
4a	Double Broadcast Quartz	1000	$18.45	$18,450.00
4b	Double Broadcast Quartz w/ 4” Epoxy wall base	1000	$19.54	$19,539.00

Continued Zone 8 Page 2

ATTACHMENT C

PRICE SCHEDULE (To be completed by offeror. See instructions for completion in Section VII, 2)

Item #	Description of flooring	Qty	Price per SF	Extended Price
4c	Double Broadcast Quartz	2000	$14.49	$28,980.00
4d	Double Broadcast Quartz w/ 4” Epoxy wall base	2000	$15.28	$30,555.00
4e	Double Broadcast Quartz	3000	$13.62	$40,860.00
4f	Double Broadcast Quartz w/ 4” Epoxy wall base	3000	$14.27	$42,804.00
5a	Epoxy	500	$10.69	$5,345.00
5b	Epoxy w/ 4” Epoxy wall base	500	$12.26	$6,128.00
5c	Urethane 3/16”	500	$28.24	$14,120.00
5d	Urethane 3/16” w/ 4” urethane Wall base	500	$29.81	$14,903.00
5e	Epoxy Flake Single Broadcast	500	$22.45	$11,225.00
5f	Epoxy Flake Single Broadcast w/ 4” Epoxy wall base	500	$24.02	$12,008.00
5g	Double Broadcast Quartz	500	$23.86	$11,930.00
5h	Double Broadcast Quartz w/ 4” Epoxy wall base	500	$25.43	$12,713.00
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____
			$_____	$_____

Negotiation Summary VTS-2375-2025

1. As part of Virginia Tech standard procedures, all awarded contracts will be publicly posted on an online contracts portal. Is there any information included that would be used to identify or harm a person's identity, finances or personal information? If so, please provide a redacted copy of your proposal.

   Industrial Floor Systems Response: No

2. Does Industrial Floor Systems agree to provide invoices with payment due thirty (30) days after receipt of invoice or goods/services, whichever is later?

   Industrial Floor Systems Response: Yes

3. Do you agree that you will be performing services as an Independent Contractor, Company, Corporation or other business entity and are not an employee of Virginia Tech or any other Commonwealth Entity?

   Industrial Floor Systems Response: Yes

4. Do you further agree that Virginia Tech will not withhold any income taxes from its payments to contractors nor will it provide any employment benefits to the contractor or contractor's employees?

   Industrial Floor Systems Response: Yes

5. End of Contract Service Transition Expectations**:** If or when a transition of service to another provider is required (end of contract life or otherwise), the university would require the incumbent firm to cooperative fully in a successful transition of services. Explain any requirements your firm might have in preparing for such a transition of services. Additionally, please indicate your willingness to establish a transition plan alongside the new provider of service which may include but not be limited to sharing important data and/or existing service information via a cooperative knowledge transfer process.

   Industrial Floor Systems Response: We have no requirements for transition of services and we are willing to establish a transition plan.

6. Do you agree that the initial contract period shall be one year?

   Industrial Floor Systems Response: Yes

7. Upon completion of the initial contract period, does Industrial Floor Systems agree that the contract may be renewed by Virginia Tech upon written agreement of both parties for four (4) one year periods, under the terms of the current contact?

   Industrial Floor Systems Response: Yes

8. If awarded a contract, do you agree to limit price increases to no more than the increase in the Consumer Price Index, CPI-W, All Items category for the latest twelve (12) months for which statistics are available at the time of renewal or 3 percent, whichever is less?

   Industrial Floor Systems Response: Yes

9. If awarded a contract, are you willing to hold prices firm for the initial contract period and the first renewal year?

   Industrial Floor Systems Response: We will hold prices firm for the initial contract period if the contract begins by September 1, 2024. We may need to ask for increases for the 1st renewal.

10. Please identify the highest-level executive in your organization that is aware of this solicitation. Describe that person's commitment to assuring the highest quality service to Virginia Tech if your organization is awarded a contract.

    Industrial Floor Systems Response: The response to the solicitation was prepared by me, Pamela Mohler, majority owner and President of Industrial Floor Systems, Inc. I am responding to this questionnaire. I have been committed to the highest quality when working at Virginia Tech for the past 19 years and will continue to do so.

11. Please describe your quickest turn-around time if emergency services are needed.

    Industrial Floor Systems Response: We are located in Roanoke, Virginia. If products are in stock, it is possible that we can arrive the day after being notified.

12. Please provide your best schedule of prices for all services offered.

    Industrial Floor Systems Response: Our best prices for the initial contract are Attachment C submitted January 11, 2024.

13. How soon after contract award can you begin providing services?

    Industrial Floor Systems Response: Immediately

14. Are you registered with and willing to participate in the eVA internet procurement solution described in the terms and conditions of the RFP?

    Industrial Floor Systems Response: We are registered with eVA.

15. Do you acknowledge, agree and understand that Virginia Tech cannot guarantee a minimum amount of business if a contract is awarded to your company?

    Industrial Floor Systems Response: Yes

16. Are the prices for all goods/services listed in your proposal inclusive of all applicable eVA system transaction fees?

    Industrial Floor Systems Response: Yes

17. Does the vendor acknowledge, agree, and understand that the terms and conditions of the RFP # 337312407 shall govern the contract if a contract is awarded to your company?

    Industrial Floor Systems Response: Yes

18. Do you agree to become a certified SWaM vendor with the Virginia Department of Small Business and Supplier Diversity and maintain that certification throughout the term of this contract?

    Industrial Floor Systems Response: We are SWaM certified and will maintain that certification throughout the term of this contract.

19. For purposes of interacting with HokieMart, please identify the person (name, phone number, email address, etc.) in your company that will serve as liaison for a) e-commerce, b) accounts receivable, c) emergency orders.

    Industrial Floor Systems Response:
    Aubrie Cecil
    Office Phone Number: (540) 725-7641
    Mobile Phone Number: [redacted]
    office@industrialfloorsystems.net

20. Please provide your hourly labor rates for any work that might be done outside of the price schedule matrix. Provide rates for standard labor and any specialized labor such as foreman etc.

    Industrial Floor Systems Response:
    $86/hour standard labor
    $92/hour specialized labor