

Bid Number 50-00143335

Labor, Materials and all Equipment Necessary to Clean, Coat, Layout, Paint and Stripe the Seventh Floor Concrete of the Parking Garage for Jefferson Parish General Service.

BID DUE: October 26, 2023 AT 2:00 PM

ATTENTION VENDORS!!!

Please review all pages and respond accordingly, complying with all provisions in the technical specifications and Jefferson Parish Instructions for Bidders and General Terms and Conditions. All bids must be received on the Purchasing Department's eProcurement site, www.jeffparishbids.net, by the bid due date and time. Late bids will not be accepted.

**Jefferson Parish Purchasing Department
200 Derbigny Street
General Government Building, Suite 4400
Gretna, LA 70053
Donna Reamey
Email: Dreamy@jeffparish.net
Phone: 504-364-2684**

All Public Work Projects are required to use the Louisiana Uniform Public Work Bid Form

All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be applied to purchases made after the request is made.

Are you requesting an escalation provision?

YES _____ NO X

MAXIMUM ESCALATION PERCENTAGE REQUESTED 0 %

INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF 09-Dec-2023

For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed, for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

Jan - Feb 2024

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable)

36184

THIS SECTION MUST BE COMPLETED BY BIDDER:

FIRM NAME: Weatherproofing Technologies Inc

ADDRESS: 3735 Green Road

CITY, STATE: Beachwood, OH ZIP: 44122

TELEPHONE: () 216-502-6329 FAX: () 866-436-7498

EMAIL ADDRESS: fortiz@wtiservices.com

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form by placing the addendum number as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: 1

NUMBER: 2

NUMBER: _____

NUMBER: _____

TOTAL PRICE OF ALL BID ITEMS: \$ 398,000.00

AUTHORIZED SIGNATURE: 

Fernando Ortiz

Printed Name

TITLE: Construction Associate Manager

SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the BID NUMBER and BID OPENING DATE indicated on the outside of the envelope submitted to the Purchasing Department.

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00143335

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
1	1.00	JOB	<p>LABOR, MATERIALS AND ALL EQUIPMENT NECESSARY TO CLEAN, COAT, LAYOUT, PAINT & STRIPE THE SEVENTH FLOOR CONCRETE OF THE PARKING GARAGE FOR JEFFERSON PARISH GENERAL SERVICES.</p> <p>0010 - PROVIDE ALL LABOR, MATERIALS, DELIVERY, EQUIPMENT, AND ALL OTHER INCIDENTALS NECESSARY TO CLEAN, COAT, LAYOUT, PAINT, AND STRIPE THE SEVENTH FLOOR CONCRETE OF THE PARKING GARAGE, 300 DERBIGNY STREET, GRETNA, LA 70053.</p> <p>*** PER THE ATTACHED SPECIFICATIONS ***</p>	\$ 7.74	\$ 398,000.00

PL

CORPORATE RESOLUTION

EXCERPT FROM MINUTES OF MEETING OF THE BOARD OF DIRECTORS OF
Weatherproofing Technologies, Inc.
INCORPORATED.

AT THE MEETING OF DIRECTORS OF Weatherproofing Technologies, Inc.
INCORPORATED, DULY NOTICED AND HELD ON August 1, 2022,
A QUORUM BEING THERE PRESENT, ON MOTION DULY MADE AND SECONDED. IT
WAS:

RESOLVED THAT JK Milliken, BE AND IS HEREBY
APPOINTED, CONSTITUTED AND DESIGNATED AS AGENT AND ATTORNEY-IN-
FACT OF THE CORPORATION WITH FULL POWER AND AUTHORITY TO ACT ON
BEHALF OF THIS CORPORATION IN ALL NEGOTIATIONS, BIDDING, CONCERNS
AND TRANSACTIONS WITH THE PARISH OF JEFFERSON OR ANY OF ITS AGENCIES,
DEPARTMENTS, EMPLOYEES OR AGENTS, INCLUDING BUT NOT LIMITED TO, THE
EXECUTION OF ALL BIDS, PAPERS, DOCUMENTS, AFFIDAVITS, BONDS, SURETIES,
CONTRACTS AND ACTS AND TO RECEIVE ALL PURCHASE ORDERS AND NOTICES
ISSUED PURSUANT TO THE PROVISIONS OF ANY SUCH BID OR CONTRACT, THIS
CORPORATION HEREBY RATIFYING, APPROVING, CONFIRMING, AND ACCEPTING
EACH AND EVERY SUCH ACT PERFORMED BY SAID AGENT AND ATTORNEY-IN-
FACT.

I HEREBY CERTIFY THE FOREGOING TO BE
A TRUE AND CORRECT COPY OF AN
EXCERPT OF THE MINUTES OF THE ABOVE
DATED MEETING OF THE BOARD OF
DIRECTORS OF SAID CORPORATION, AND
THE SAME HAS NOT BEEN REVOKED OR
RESCINDED.



~~SECRETARY-TREASURER~~ President

October 26, 2023

DATE

Non-Public Works Bid Affidavit Instructions

- **Affidavit is supplied as a courtesy to Affiants, but it is the responsibility of the affiant to insure the affidavit they submit to Jefferson Parish complies, in both form and content, with federal, state and parish laws.**
- **Affidavit must be signed by an authorized representative of the entity or the affidavit will not be accepted.**
- **Affidavit must be notarized or the affidavit will not be accepted.**
- **Notary must sign name, print name, and include bar/notary number, or the affidavit will not be accepted.**
- **Affiant MUST select either A or B when required or the affidavit will not be accepted.**
- **Affiants who select choice A must include an attachment or the affidavit will not be accepted.**
- **If both choice A and B are selected, the affidavit will not be accepted.**
- **Affidavit marked N/A will not be accepted.**
- **It is the responsibility of the Affiant to submit a new affidavit if any additional campaign contributions are made after the affidavit is executed but prior to the time the council acts on the matter.**

Instruction sheet may be omitted when submitting the affidavit

Non-Public Works Bid

AFFIDAVIT

STATE OF Ohio

PARISH/COUNTY OF Cuyahoga

BEFORE ME, the undersigned authority, personally came and appeared: JK Milliken
_____, (Affiant) who after being by me duly sworn, deposed and said that
he/she is the fully authorized President of WTI (Entity),
the party who submitted a bid in response to Bid Number 50-00143335 to the Parish of
Jefferson.

Affiant further said:

Campaign Contribution Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all campaign contributions, including the date and amount of each contribution, made to current or former elected officials of the Parish of Jefferson by Entity, Affiant, and/or officers, directors and owners, including employees, owning 25% or more of the Entity during the two-year period immediately preceding the date of this affidavit or the current term of the elected official, whichever is greater. Further, Entity, Affiant, and/or Entity Owners have not made any contributions to or in support of current or former members of the Jefferson Parish Council or the Jefferson Parish President through or in the name of another person or legal entity, either directly or indirectly.

Choice B X there are **NO** campaign contributions made which would require disclosure under Choice A of this section.

Debt Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all debts owed by the affiant to any elected or appointed official of the Parish of Jefferson, and any and all debts owed by any elected or appointed official of the Parish to the Affiant.

Choice B x _____ There are **NO** debts which would require disclosure under Choice A of this section.

Affiant further said:

That Affiant has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for Affiant; and

[The remainder of this page is intentionally left blank.]

That no part of the contract price received by Affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for Affiant.

JK Milliken
Signature of Affiant

JK Milliken, President
Printed Name of Affiant

SWORN AND SUBSCRIBED TO BEFORE ME
ON THE 26 DAY OF October, 2023

Rachel Al-Alami
Notary Public
Rachel Al-Alami
Printed Name of Notary
102583
Notary/Bar Roll Number



Rachel Al-Alami
Attorney at Law
Notary Public, State of Ohio
My Commission Has No Expiration Date
Sec 147.03 O.R.C.

My commission expires N/A



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/26/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA LLC. 200 Public Square, Suite 3760 Cleveland, OH 44114-1824 CN102302710-RPM-Cas-23-24 WEATH 033125	CONTACT NAME: ...	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
E-MAIL ADDRESS:		
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A : First Continental Services Co.		
INSURER B : Zurich American Insurance Company		16535
INSURER C : N/A		N/A
INSURER D : American Zurich Insurance Company		40142
INSURER E :		
INSURER F :		

COVERAGES CERTIFICATE NUMBER: CLE-007149013-01 **REVISION NUMBER:** 1

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			1-GLRPM-01/2023	04/01/2023	04/01/2024	EACH OCCURRENCE	\$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 1,000,000
							MED EXP (Any one person)	\$ 10,000
							PERSONAL & ADV INJURY	\$ 1,000,000
							GENERAL AGGREGATE	\$ 1,000,000
							PRODUCTS - COMP/OP AGG	\$ 1,000,000
								\$
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY			BAP9258789-16	04/01/2023	04/01/2024	COMBINED SINGLE LIMIT (Ea accident)	\$ 5,000,000
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE	\$
							AGGREGATE	\$
								\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input checked="" type="checkbox"/> If yes, describe under DESCRIPTION OF OPERATIONS below			WC9258790-16 (MA, PR, WI)	04/01/2023	04/01/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER	
D				WC9258788-16 (AOS)	04/01/2023	04/01/2024	E.L. EACH ACCIDENT	\$ 2,000,000
B				EWS5965995-15 (XS OH-\$500k SIR)	04/01/2023	04/01/2024	E.L. DISEASE - EA EMPLOYEE	\$ 2,000,000
D				WC7121392-01 (TX)	04/01/2023	04/01/2024	E.L. DISEASE - POLICY LIMIT	\$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Jefferson Parish, its Districts Departments and Agencies under the direction of the Parish President and the Parish Council is/are named as additional insured (except workers compensation) where required by written contract to the extent of losses caused solely and directly by Weatherproofing Technologies, Inc. employees during the course of authorized general contracting activities.

CERTIFICATE HOLDER Jefferson Parish 200 Derbigny Street General Government Building Suite 4400 Gretna, LA 70053	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Marsh USA LLC</i>

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ADDITIONAL REMARKS SCHEDULE

AGENCY MARSH USA LLC.		NAMED INSURED Weatherproofing Technologies, Inc. 3735 Green Rd. Beachwood, OH 44122	
POLICY NUMBER		EFFECTIVE DATE:	
CARRIER	NAIC CODE		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

The First Continental Service Co. placement is a direct placement. Marsh Management Services (Vermont) manages the captive insurer indicated here. Marsh USA LLC has only acted in the role of a consultant to the client with respect to this placement, which is indicated here for your convenience.

MATERIALS SPECIFIED IN LIEU OF

Bid Specifications for Bid # 50-00143335

Section 8.0 - Material Description:

8.1 ~~MasterSeal® TC 225™~~ Tremco Vulkem 350/346/346

TC 225 MasterSeal® is a revolutionary product designed to protect asphalt pavements from the elements. The product helps extend the pavement's life by protecting it from water infiltration, UV radiation, and other environmental degradation factors.

8.2 ~~MasterSeal® SL1™~~ Tremco Dymonic 100

SL 1 is a one-component non-priming, self-leveling elastomeric polyurethane designed for expansion joints in concrete floors and decks. Use it where flexibility, abrasion, and puncture resistance are required.

- Self-leveling, so no tooling needed
- No priming needed on most surfaces, offering excellent adhesion
- Made with quality ingredients for efficiency
- Easy to gun - installs quickly

8.3 Watson Bowman Jeene® Joint & Watson Bowman CreteMembrane Gen II Joint

Jeene® Parking Series is a patented structural sealing joint system with an air-pressurized neoprene profile bonded with a specially formulated epoxy adhesive. When properly installed, the high-performance Jeene® joint system will not tear away, protrude out of, or slip from its original position when exposed to repeated mechanical or thermal movements. Jeene® FW Series is ADA-compliant.

Features & Benefits

- Air-pressurized epoxy bond
- Watertight continuous seal
- Patent protected
- Chemical-resistant neoprene
- Accommodates complex miters

8.4 ~~MasterSeal® 940/941~~ Covia Granusil 4095

MasterSeal® 940 and MasterSeal® 941 are broadcast aggregates for deck coating systems. MasterSeal® 940 and MasterSeal® 941 Provides skid resistance to increase safety and offer excellent durability and superior abrasion resistance.

8.5 BASF Close Cell Backer Rod

- Fills large gaps and openings
- Provides a sound surface for caulking projects
- For use in expansion joints in driveways and sidewalks

Section 8.0 - Material Description: Continued

8.6 Prosoco 2010 Surface Cleaner

2010 All Surface Cleaner is a cleaner and degreaser for light-to-heavily soiled stone, tile, masonry, and concrete. Powerful enough for industrial use, flexible enough for home use, versatile 2010 replaces a host of individual cleaning agents.

8.7 ~~Sherwin-Williams® Hotline fast dry~~ Rust-Oleum 2300 System Traffic Zone Striping Paint

Hotline® waterborne traffic paints, TM2320 and TM2321, are fast-drying binders with the most advanced resin technology. Key features include; outstanding glass bead retention, excellent early washout resistance, and more consistent drying times, even under high humidity conditions. Uses for TM2320 and TM2321 are used primarily for long-line striping on streets and highways and parking lot striping. Other possible uses include auxiliary markings such as stop bars, crosswalks, and striping airfields.

Section 9.0 - Hours of Work:

The work to be performed shall be scheduled during regular working hours, 7:00 a.m. - 5:00 p.m., Monday through Friday. The main entrance to all buildings shall be accessible at all times during this project. The successful bidder may choose to work before or after regular working hours to provide a safe work environment at no extra charge to Jefferson Parish.

Section 10.0 – Pre-Construction Conference and Notice to Proceed:

A “Start of Work Conference” shall be held between the successful bidder and the owner before any work commences.

No materials shall be ordered until the successful bidder receives a written “Notice to Order” from the Department of Genal Services.

No work shall be performed until the successful bidder receives a written “Notice to Proceed” to begin work from the Department of General Services.

PROPOSAL LETTER

High Performance Roofing, Building Envelopes and Construction Services

Proposal for Parking Garage Deck Coating

Long
Live
Your
Buildings



**Jefferson
Parish**

State of Louisiana

Bid Number: 50-00143335
Proposal #: 5056271

Jefferson Parish – Government
Center Parking Garage
300 Derbigny Dr
Gretna, LA 70053

October 26, 2023

Mrs. Donna Reamey
Jefferson Parish – Purchasing Department
200 Derbigny Street
General Government Building - Suite 4400
Gretna, LA 70053

RE: JEFFERSON PARISH – GENERAL GOVERNMENT BUILDING
Resurfacing Parking Garage Seventh Floor

Weatherproofing Technologies, Inc. (WTI), an affiliate of Tremco CPG Inc, is pleased to submit to Jefferson Parish (CLIENT) this proposal to provide a protective waterproofing and traffic coating membrane for parking garage located at 300 Derbigny Street, Gretna, Louisiana. We look forward to the possibility of working with you on this project.



Fig 1: Building Overview

BASE SCOPE OF WORK

GENERAL CONDITIONS

Mobilization – Demobilization temporary protection including set up and maintaining all necessary temporary partitions and barricades around work area:

- Install temporary protection, as required.
- Install perimeter netting and/or fencing to meet OSHA safety requirements, as required.
- Protection of adjacent building walls and facilities required by State Laws and City Ordinances.
- Mobilization, site preparation, and demobilization of equipment.
- Site cleaning and restoration to original condition required for completion of the work.

DECK PREPARATION AND REPAIRS

Work consists of the following:

- Remove all debris from the entire deck and ramp to the sixth floor and dispose accordingly.
- Remove two (2) spalled/detached/unsound concrete patch areas in ramp, clean surface from dirt, and rework with mortar to match concrete slab shape.
- Grind concrete surface to remove all line striping.
- Reset loose wheel stops with epoxy adhesive in the proper location. Install dowel/anchors where missing. Wheel stops that are not loose will remain in place.
- Pre-wet deck and ramp surface, apply Prosoco 2010 surface cleaner, and pressure wash the entire deck and ramp surface at a minimum of 5000 PSI.

JOINTS SEALANTS

Work consists of the following:

- Remove existing control and cove joint sealants, abrade joint edges to remove loose residual sealant, install backer rod, and new single component Dymonic 100 polyurethane sealant. The sealant color will be chosen from the manufacturer's standard color chart.
- Remove existing expansion joint system (wall-to-wall, deck-to-deck, deck-to-wall) at both ends of the parking deck and abrade joint edges to remove loose residual sealant.
- Install new Watson Bowman Jeene joint compression at wall-to-wall and deck-to-wall sections.
- Install new Watson Bowman Crete Membrane Gen II wing joint compression at deck-to-deck at both ends drive-thru sections.
- Install new single component Dymonic 100 polyurethane sealant around wheel stops base.

WATERPROOFING AND TRAFFIC COATING

Work consists of the following:

- Apply to concrete deck surface one (1) coat of TREMprime Multi-Surface Urethane Primer, one (1) coat of Vulkem 350 base coat, one (1) coat intermediate of Vulkem 346 expressed with aggregate to refusal, one (1) coat intermediate of Vulkem 346 expressed with aggregate to refusal in drive-thru lanes, and one (1) topcoat of Vulkem 346 per manufacturer's instructions. Single color to be chosen from list of manufacturer's standard colors.
- Includes a five (5) years Tremco Materials Warranty and two (2) years Workmanship Warranty.

LINE STRIPING AND WHEEL STOPS PAINT

Work consists of the following:

- Apply Rust-Oleum 2300 System Traffic Zone Striping Paint, as per manufacturer recommendations and guidelines, to match the existing layout. Parking space striping, wheel stops, curbs, and ramp colors will be painted with the following colors:
 - a. Yellow: parking spaces, curb marking, directional symbols, wheel stops
 - b. Blue: handicap spaces, handicap van accessible spaces, and handicap symbols
 - c. White: handicap emblem inside the handicap blue square.

BASE SCOPE TOTAL:

\$398,000.00

The preceding recommended repair program and estimate assumes the following:

1. Work shall be performed during normal working hours on weekdays.
2. Work will be performed at one time, under one contract.
3. Work cannot be completed during inclement weather.
4. We have included one mobilization for the project. Additional mobilization will result in additional charges.
5. Barricades and signs along with traffic and pedestrian control protection will be provided as needed.
6. Use of building electric power and water assumed during project duration.
7. City Permits have been excluded from the report.
8. Report supports OSHA's 29 CFR 1926.1153 Respirable Crystalline Silica Standard.
9. Sales tax and prevailing wages have been excluded.
10. Payment Performance Bond has been included in proposal.
11. Freight charges have been included in proposal.

Very Truly Yours,

WEATHERPROOFING TECHNOLOGIES, INC.



Fernando Ortiz
Construction Management Associate

CC: Taylor Smith, Tremco
Deron Aksentowitz, WTI
Tony Poleo, WTI
Jack Milliken, WTI

We have included in the project costs all labor, materials, equipment, and incidentals to complete the work, as outlined, including construction management, profit, and overhead. **For the proposed base scope of work, we estimate 30-40 working days for completion. We are estimating a January - February 2024 start date.**

This report is valid for forty-five (45) days and does not include taxes.

Services requested beyond the above scope of work shall be considered additional services. Separate or multiple cost opinions, if requested, shall be prepared at additional cost.

This report is an offer by WTI to provide the Scope of Work set forth above to the Customer on the terms and conditions set forth herein and in WTI's standard terms and conditions (a copy of which may be obtained at <http://www.tremcoroofing.com/files/share/terms/TandCWTI.pdf>), which are hereby incorporated by reference (together, the "Terms and Conditions"). The Terms and Conditions will govern the Work to the exclusion of any other or different terms, including in any customer purchase order, unless otherwise expressly agreed in writing pursuant to a Master Agreement or similar contract with Customer signed by an authorized representative of WTI. Any Performance and Payment Bonds issued for associated repair work are limited to performance of the repairs and one year warranty on such repairs. Bonds, if issued, do not apply to the TremCare extended service agreement. Please confirm your acceptance by return e-mail to the representative identified below. Upon receipt of acceptance, WTI will process your order and promptly begin the Scope of Work.

PHOTOGRAPHIC DOCUMENTATION

WITH OBSERVATIONS

PHOTO GROUP #1 – OVERVIEWS



Photo 1.1 – Building Overview – Highlighted Area Under Scope of Work.



Photo 1.2 – Parking Garage Deck Overview

PHOTO GROUP #1 – OVERVIEWS



Photo 1.3 – Parking Garage Deck Overview



Photo 1.4 – Typical Cove Joint Highlighted

PHOTO GROUP #1 – OVERVIEWS



Photo 1.5 – Failed cove joint sealants.



Photo 1.6 – Failed expansion deck-to-wall joint sealant.

PHOTO GROUP #1 – OVERVIEWS



Photo 1.7 – Drive-thru expansion wing joint overview.

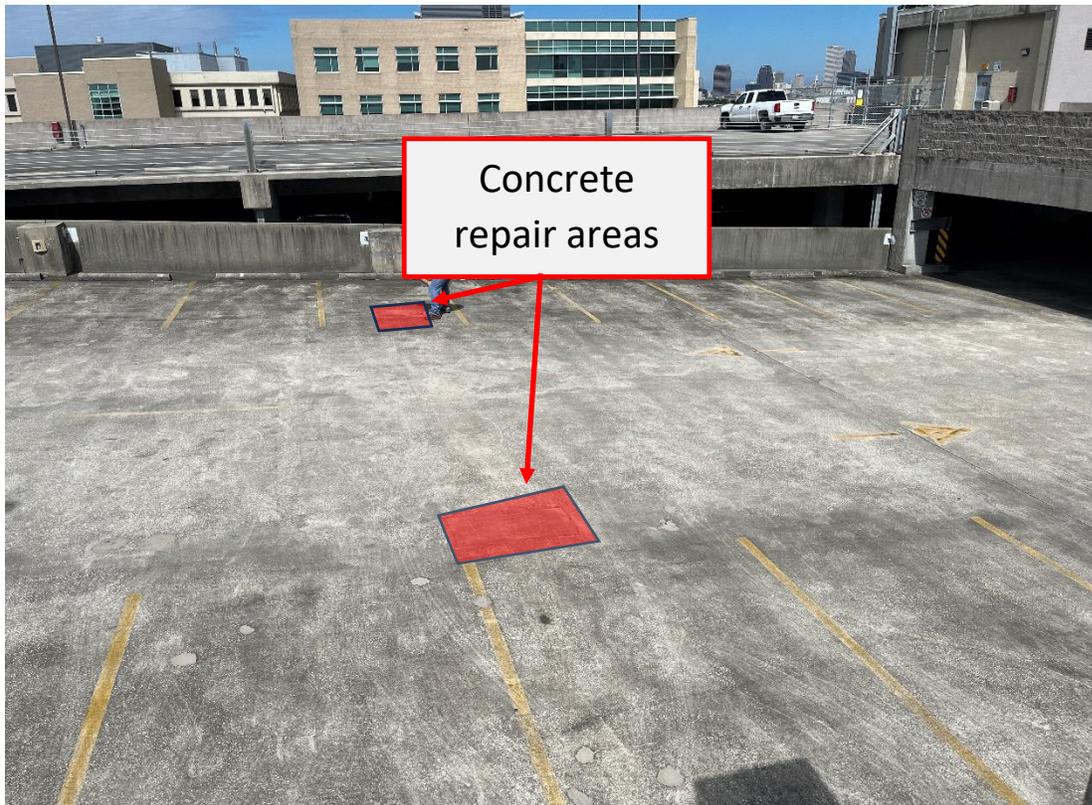


Photo 1.8 – Unsound/spalling/damaged concrete in ramp areas to be repaired.

MANUFACTURER CATALOG DATA



FLUID-APPLIED TRAFFIC COATING SYSTEMS

Comprehensive Solutions for Pedestrian, Vehicular and Specialty Applications





CONNECTIONS: THE KEY TO LONG-TERM SUCCESS

When it comes to protecting the entire building envelope, Tremco stands alone as your single source manufacturer of choice. On-site training, field support, and sustainable solutions designed to streamline your design and installation process are only a few of the value-added solutions we provide. Our team is adept at resolving numerous building envelope challenges that you may encounter on the job — and we pride ourselves on helping your team realize the maximum long-term value and quality of your finished structure.

Tremco products are conceived, formulated and tested in our labs, as well as in the field to ensure maximum compatibility and connectivity. Our expertise extends to all six sides of the building envelope, providing peace of mind. You are always covered when your project abuts, adjoins or overlaps other Tremco components or systems, effectively eliminating these otherwise troublesome connection points. Few others can offer this type of comprehensive approach.

Ultimately, our attention to these connections allows us to provide unique, all-inclusive system warranty options that our competitors simply cannot match.

THE TREMCO CPG DIFFERENCE

Speed construction or restoration. Simplify installation. Extend the construction season. A Tremco Construction Product Group (CPG) single-source building envelope means more for everyone — more satisfied contractors, more comfortable occupants or tenants, and more efficient structures and cost-effective operation for owners.



Faster Construction Time

Lightweight, fast-curing and prefabricated products mean less occupant disruption, faster return to service, less revenue lost — and no call-backs.



Any Look You Want

A wide range of colors and finishes like brick, granite, metals, stucco and more provide maximum flexibility in your roof and façade aesthetic.



Stronger and More Resilient

Our systems are designed for maximum durability, many with service lives far surpassing that of competing systems.



Leak-Free Performance

Products provide maximum protection from air, moisture and thermal infiltration — and are performance tested in our one-of-a-kind Sustainable Building Solutions Test Facility.



Cost Effective for the Long Term

A broad range of products can fit any project budget — but our energy efficiency and maintenance solutions can also help you ensure cost-effective ownership and operation for the long term.



Better Insulated

Industry-leading brands provide solutions for more efficient building construction and operation, and exceed strict energy codes for insulation.



One Point of Contact

Our products and systems are backed by industry-leading warranties — all from a single point of contact. We can also help with everything from asset management to diagnostics to installer training.



Leading Edge Sustainability

Our building solutions help you meet green building standards like Net Zero, Living Building Challenge, Passive House and more.

TRAFFIC COATINGS OVERVIEW

With a wide range of solutions for vehicular, pedestrian and specialty applications, Tremco's high-performance liquid-applied membranes offer superior, long-term durability in traffic-bearing service conditions.

Our systems are designed to waterproof structures, protecting substrates from the harsh effects of chemical intrusion, thereby extending the lifecycle of these surfaces. The waterproofing layer of our systems are protected by various wear and top coats, increasing the durability of the installed system.

With over 40 years of experience in traffic coatings, we've created and developed products that meet the unique demands of any project. Our coatings portfolio addresses speed of application, durability, budget considerations and more. We also offer Neighbor Friendly (NF) formulas for sensitive area applications and a fully-compatible range of detailing sealants. Whether repair/restoration or new construction, Tremco has proven solutions for the following applications:

- Parking garages
- Stadiums
- Dumpster areas
- Pedestrian walkways
- Mechanical rooms
- Hardscape/pool areas
- Balconies
- Recreation decks

Proven Performance

Tremco traffic coating products and systems are built upon a four decade track record of proven long-term performance. These systems have been independently tested to ensure they will meet the complex installation scenarios and grueling service condition demands of your project.

On-Site Training, Testing, and Tech Support

On-site conditions always vary, presenting challenges on the project. Tremco's local technical sales representatives work with installers to provide the ideal solution. Immediate assistance is always available by calling our Technical Services Department.



APPLICATIONS:

	Plywood	Under Tile	Pedestrian Deck	Vehicular Deck	Athletic Surface	Roof Terrace	Mechanical Room	Balcony
PRIMERS								
Vulkem® Primer #171 ‡	•	•	•	•	•	•	•	•
Vulkem® 191 Primer	•	•	•	•	•	•	•	•
Tremco Epoxy Primer	•	•	•	•	•	•	•	•
TREMprime® VB Plus Primer		•	•	•	•	•	•	•
TREMprime® Multi-Surface Urethane Primer	•		•				•	•
BASE COATS								
Vulkem® 350	•	•	•	•	•	•	•	•
Vulkem® 350FC	•	•	•	•	•	•	•	•
Vulkem® 350NF	•	•	•	•	•	•	•	•
Vulkem® 360NF	•		•	•	•	•	•	•
INTERMEDIATE COATS								
Vulkem® 346				•				
Vulkem® 351								
Vulkem® 351NF	•							
Vulkem® 950NF				•		•		
Vulkem® 951NF				•				
Vulkem® Epoxy WC				•				
TOP COATS								
Vulkem® 346				•				
Vulkem® 351			•		•	•	•	•
Vulkem® 351NF	•		•		•	•	•	•
Vulkem® 950NF			•	•			•	
Vulkem® 951NF	•		•	•	•	•	•	•
SPECIALTY								
Vulkem® OC810	•		•			•	•	•

Reference the current product data sheets on our website at www.tremcosealants.com for more specific product information. For specific tie-in recommendations and Instructions, please contact your local Tremco Sales or Technical Service Representative. ‡Not for use in Canada

PROPERTIES:

	Low VOC	Components	UV Stable (Aliphatic)	Recommended Substrates:
PRIMERS				
Vulkem® Primer #171 ‡		1		Concrete, plywood, other porous substrates**
Vulkem® 191 Primer	•	1		Concrete, plywood, other porous substrates**, interlaminary, urethane coatings, TREMproof membranes
Tremco Epoxy Primer	•	2		Concrete, plywood, other porous substrates**, interlaminary, urethane coatings, TREMproof membranes
TREMprime® VB Plus Primer	•	2		Concrete
TREMprime® Multi-Surface Urethane Primer	•	2		Concrete, plywood, other porous substrates**, interlaminary, urethane coatings
BASE COATS				
Vulkem® 350		1		Concrete, metal
Vulkem® 350FC	•	2		Concrete, metal
Vulkem® 350NF	•	1		Concrete, metal
Vulkem® 360NF	•	2		Concrete, metal
INTERMEDIATE COATS				
Vulkem® 346		1	•	Vulkem 346
Vulkem® 351		1	•	Vulkem 350, 350NF, 360NF
Vulkem® 351NF		2	•	Vulkem 350NF
Vulkem® 950NF	•	2		Vulkem 350NF, 350FC
Vulkem® 951NF	•	2	•	Vulkem 350NF, 350FC
Vulkem® Epoxy WC	•	2		Vulkem 350, 350NF, 360NF
TOP COATS				
Vulkem® 346		1	•	Vulkem 346
Vulkem® 351		1	•	Vulkem 350, 350NF, 360NF
Vulkem® 351NF	•	2	•	Vulkem 350NF
Vulkem® 950NF	•	2		Vulkem 350NF, 350FC
Vulkem® 951NF	•	2	•	Vulkem 950NF
SPECIALTY				
Vulkem® OC810	•	1	•	Concrete, wood (with Tremco-approved primer)

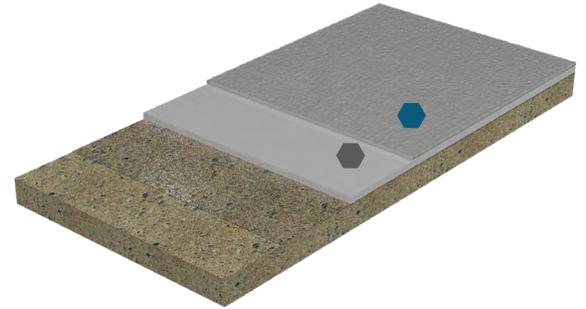
Reference the current product data sheets on our website at www.tremcosealants.com for more specific product information. For specific tie-in recommendations and Instructions, please contact your local Tremco Sales or Technical Service Representative. *Prior approval required by Tremco Technical Services; approval is based on compatibility and adhesion testing. ‡Not for use in Canada

PEDESTRIAN SYSTEMS

Ideal for plazas, recreation decks, balconies, pool decks, mechanical rooms, stadiums, athletic surfaces and similar applications requiring an elastomeric waterproofing system.

STANDARD PEDESTRIAN

Two-coat systems for applications that will receive light-to-medium pedestrian traffic, such as balconies, mechanical rooms, walkways and terraces.



	Product Options	Coverage Rate	Wet Mils
Base Coats	Vulkem 350	40 to 64 ft ² /gal	25 to 40
	Vulkem 350FC	64 ft ² /gal	25
	Vulkem 350NF	64 ft ² /gal	25
	Vulkem 360NF	64 ft ² /gal	25
Top Coats	Vulkem 351	105 ft ² /gal	15
	Vulkem 351NF	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12

Typical Systems

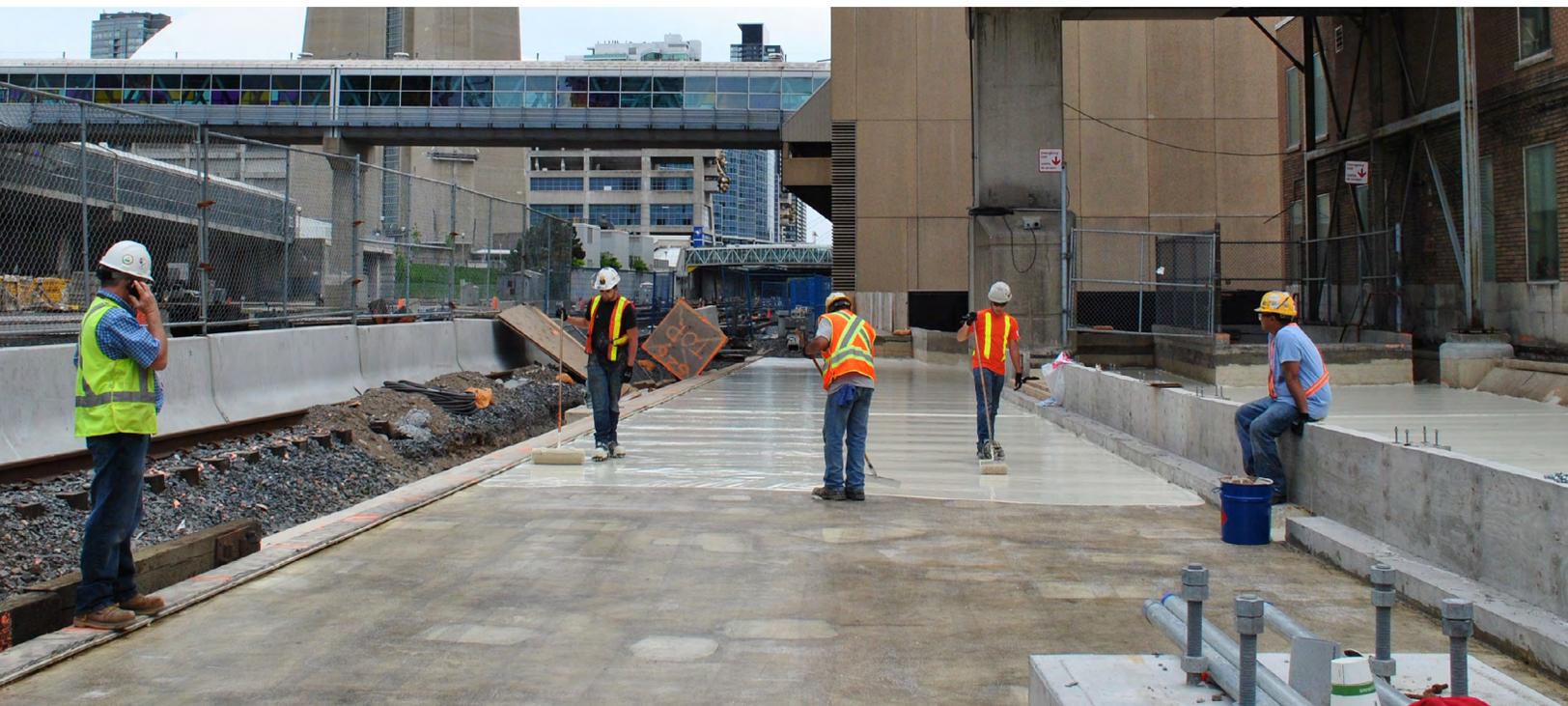
Standard Single-Component: 350NF / 351

Standard Two-Component: 350FC/951NF

Low VOC: 350NF / 351NF

Quick-Cure, Low VOC: 360NF / 951NF

Contact your local Tremco Sales Representative to determine the highest-performing system based on regional needs.

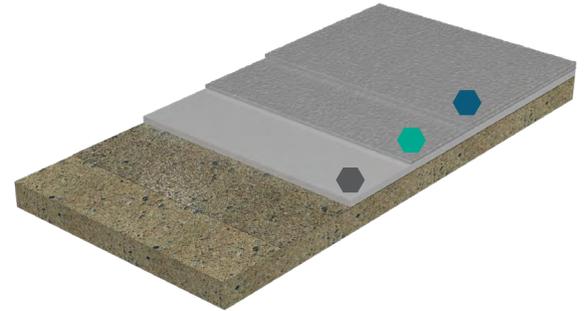


PEDESTRIAN SYSTEMS

Ideal for plazas, recreation decks, balconies, pool decks, mechanical rooms, stadiums, athletic surfaces and similar applications requiring an elastomeric waterproofing system.

HEAVY-DUTY PEDESTRIAN

Three-coat systems for areas that will be exposed to steady foot traffic, such as stadiums, amenity decks and pedestrian bridges.



	Product Options	Coverage Rate	Wet Mil
Base Coats	Vulkem 350	40 to 64 ft ² /gal	25 to 40
	Vulkem 350FC	64 ft ² /gal	25
	Vulkem 350NF	64 ft ² /gal	25 to 40
	Vulkem 360NF	64 ft ² /gal	25 to 40
Intermediate	Vulkem 351	105 ft ² /gal	15
	Vulkem 351NF	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
Top Coats	Vulkem 351	105 ft ² /gal	15
	Vulkem 351NF	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12

Typical Systems

Standard Single-Component: 350NF / 351 / 351
Standard Two-Component: 350FC / 950NF / 951NF
Quick-Cure, Low VOC: 360NF / 951NF / 951NF

Contact your local Tremco Sales Representative to determine the highest-performing system based on regional needs.

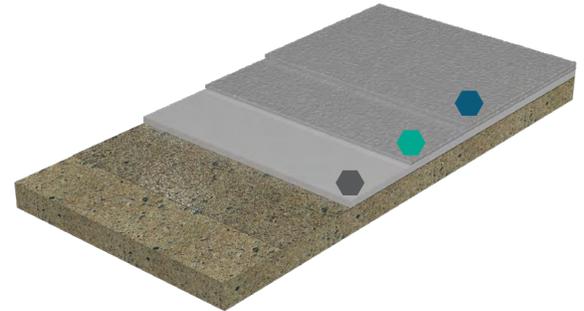


VEHICULAR SYSTEMS

Ideal for waterproofing concrete slabs and protecting occupied areas underneath from water damage, while protecting from the damaging effects of water, deicing salts, chemicals, gasoline, oils and anti-freeze.

STANDARD VEHICULAR

Three-coat systems for areas that will be exposed to standard vehicular traffic.



	Product Options	Coverage Rate	Wet Mils
Base Coats	Vulkem 350	40 to 64 ft ² /gal	25
	Vulkem 350FC	64 ft ² /gal	25
	Vulkem 350NF	64 ft ² /gal	25
	Vulkem 360NF	64 ft ² /gal	25
Intermediate	Vulkem 346	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12
	Vulkem Epoxy WC	133 ft ² /gal	12
Top Coats	Vulkem 346	133 to 160 ft ² /gal	10 to 12
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12

Typical Systems

Standard Single-Component: 350NF / 346 / 346
Standard Two-Component: 350FC / 950NF / 951NF
Low VOC, Indoor: 350NF / 950NF / 950NF
Low VOC, UV Stable: 350NF / 950NF / 951NF
Enhanced Durability: 350NF / Epoxy WC / 346

Vulkem 360NF can be used as a quick-cure, or low-temperature option.

Contact your local Tremco Sales Representative to determine the highest-performing system, based on regional needs.

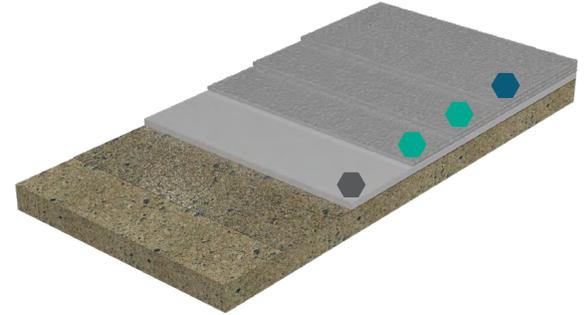


VEHICULAR SYSTEMS

Ideal for waterproofing concrete slabs and protecting occupied areas underneath from water damage, while protecting from the damaging effects of water, deicing salts, chemicals, gasoline, oils and anti-freeze.

HEAVY-DUTY VEHICULAR

Heavy-duty, four-coat systems for areas that will be subjected to steady vehicular traffic.



	Product Options	Coverage Rate	Wet Mils
Base Coats	Vulkem 350	40 to 64 ft ² /gal	25
	Vulkem 350FC	64 ft ² /gal	25
	Vulkem 350NF	64 ft ² /gal	25
	Vulkem 360NF	64 ft ² /gal	25
Intermediate	Vulkem 346	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12
	Vulkem Epoxy WC	100 ft ² /gal	16
Top Coats	Vulkem 346	133 to 160 ft ² /gal	10 to 12
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12

Typical Systems

Standard Single-Component: 350NF / 346 / 346 / 346

Standard Two-Component: 350FC / 950NF / 951NF

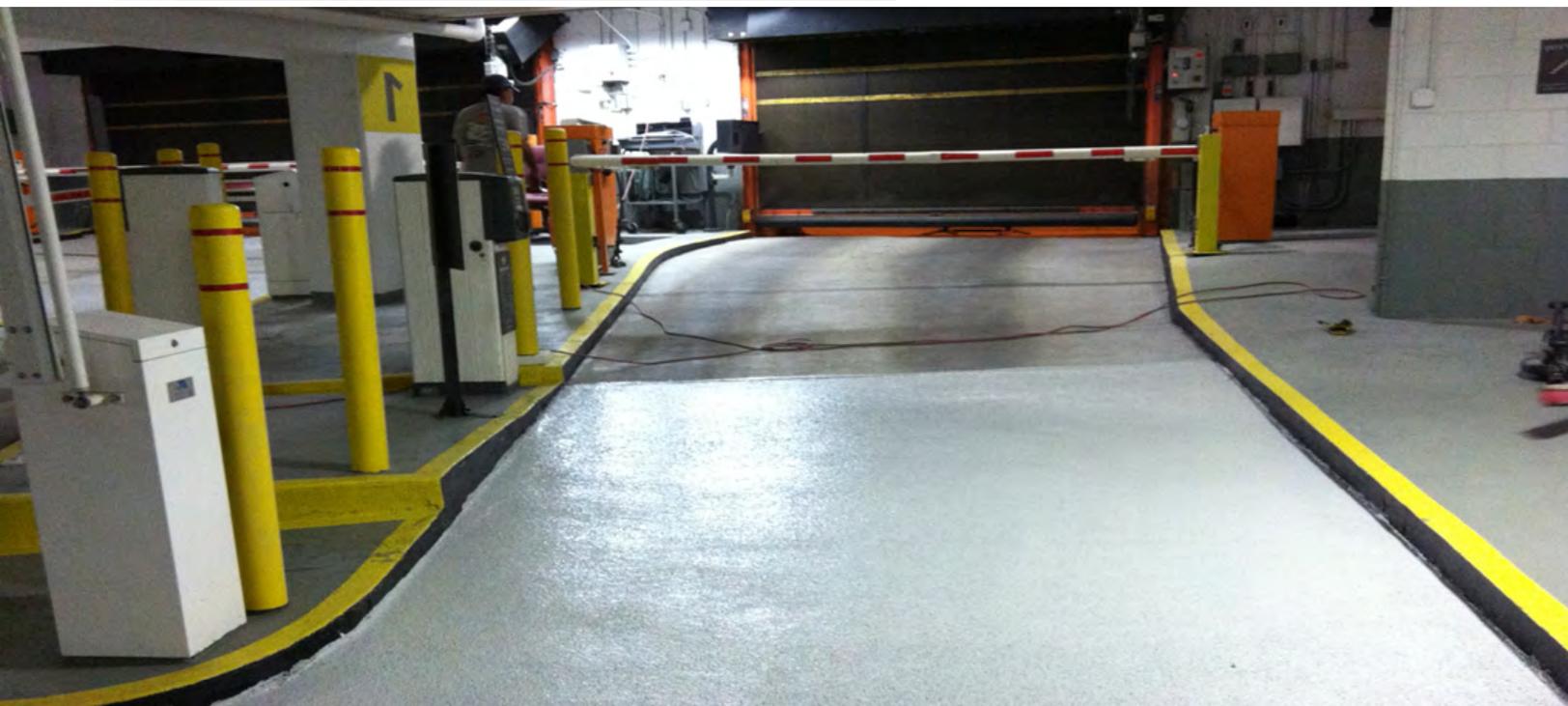
Low VOC, Indoor: 350NF / 950NF / 950NF / 950NF

Low VOC, UV Stable: 350NF / 950NF / 950NF / 951NF

Enhanced Durability: 350NF / Epoxy WC / 346

Vulkem 360NF can be used as a quick-cure, or low-temperature option.

Contact your local Tremco Sales Representative to determine the highest-performing system based on regional needs.

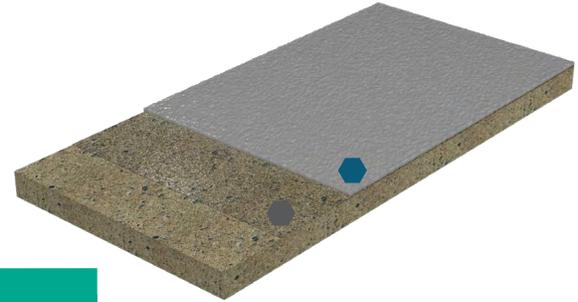


SPECIALTY SYSTEMS

Waterproof coatings for a variety of specialty applications, including one-coat and rapid-cure solutions, as well as systems for under-tile applications, mechanical rooms and areas subject to heavy abrasion.

BALCONY, LIGHT PEDESTRIAN & MECHANICAL ROOM

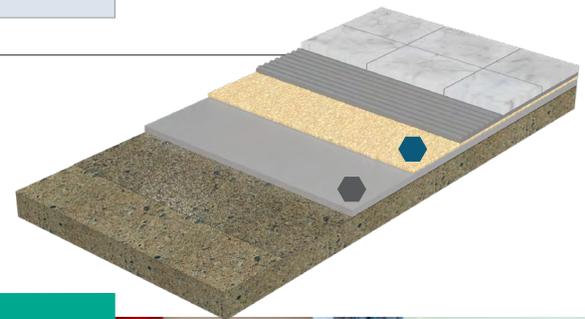
One-coat systems for areas that will receive light foot traffic such as balconies and mechanical rooms / work areas.



Product Options		Coverage Rate	Wet Mils
Primer Coats	Vulkem Primer #171	100 to 600 ft ² /gal	
	Vulkem 191 Primer	400 to 450 ft ² /gal	
	TREMprime Multi-Surface Urethane Primer	200 to 300 ft ² /gal	
	TREMprime VB Plus Primer	100 ft ² /gal	
Top	Vulkem OC810	64 ft ² /gal	25

UNDER-TILE APPLICATIONS

Recommended two-coat system for tiles, pavers and bonded overburden.



Product Options		Coverage Rate	Wet Mils
Base	Vulkem 350NF	25 to 40 ft ² /gal	40 to 60
Top	Tremco Epoxy Primer	133 to 160 ft ² /gal	10 to 12

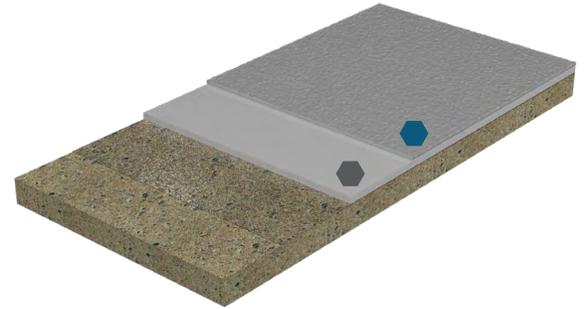


SPECIALTY SYSTEMS

Waterproof coatings for a variety of specialty applications, including one-coat and rapid-cure solutions, as well as systems for under-tile applications, mechanical rooms and areas subject to heavy abrasion.

MECHANICAL ROOM

Two-coat systems for mechanical rooms / work areas.



	Product Options	Coverage Rate	Wet Mils
Base Coats	Vulkem 350	40 to 64 ft ² /gal	25 to 40
	Vulkem 350FC	64 ft ² /gal	25
	Vulkem 350NF	64 ft ² /gal	25 to 40
	Vulkem 360NF	64 ft ² /gal	25 to 40
Top Coats	Vulkem 351	105 ft ² /gal	15
	Vulkem 351NF	105 ft ² /gal	15
	Vulkem 950NF	133 ft ² /gal	12
	Vulkem 951NF	133 ft ² /gal	12

Typical Systems

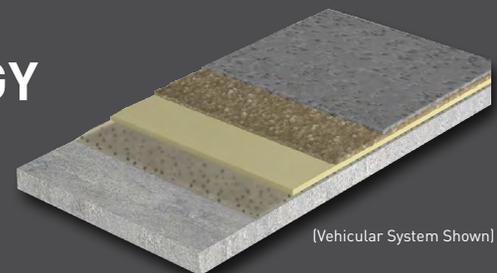
Standard Single-Component: 350NF / 351
Standard Two-Component: 350FC / 950NF
Low VOC: 350NF / 351NF
Low VOC, Quick-Cure: 360NF / 950NF

Contact your local Tremco Sales Representative to determine the highest-performing system based on regional needs.

VULKEM® EWS WITH PUMA TECHNOLOGY FOR EXTREME-WEAR APPLICATIONS

Vulkem EWS Coating Systems with PUMA technology provide superior elongation over traditional MMA/PMMA technology systems. These rapid-curing systems feature extreme durability, fast cure independent of low temperatures, crack bridging, tenacious adhesion and superior abrasion resistance.

For complete details and Vulkem EWS System offerings, please refer to the PUMA Technology brochure available on our website, or request a copy from your local Tremco Sales Representative.



(Vehicular System Shown)



Tremco | 3735 Green Road | Beachwood, OH 44122 | US: 800.852.9068 | CAN: 800.363.3213 | tremcosealants.com

Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.

Use of the ® symbol indicates registration with the US Patent & Trademark Office and the Canadian Intellectual Property Office.

0823/TTCB



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VULKEM® TRAFFIC COATINGS COLOR CARD

VULKEM®
346

VULKEM®
351 / 351NF

VULKEM®
950NF

VULKEM®
951NF

VULKEM®
OC810



BLACK*



BLACK* / NF*



BLACK



BLACK



BLACK*



SLATE GRAY



SLATE GRAY



SLATE GRAY



SLATE GRAY



SLATE GRAY



GRAY



GRAY



GRAY



GRAY



GRAY



WHITE*



WHITE / NF*



WHITE*



WHITE*



WHITE*



LIMESTONE



LIMESTONE



LIMESTONE*



LIMESTONE



LIMESTONE



BEIGE*



BEIGE



BEIGE*



BEIGE



BEIGE



MAPLE*



MAPLE / NF*



MAPLE*



MAPLE*



MAPLE



CHARCOAL (351 ONLY)



CHARCOAL



CHARCOAL*



CHARCOAL

*Denotes Special Order color. Minimum order requirements apply. See below for minimum order requirements:

Vulkem 346: 1x 5 gallon pail
 Vulkem 351NF: 12x 5 gallon pails (60 gallons)
 Vulkem 951NF: 16x 5 gallon pails (60 gallons)

Vulkem 351: 1x 5 gallon pail
 Vulkem 950NF: 22x 5 gallon pails (110 gallons)
 Vulkem OC810: 12x 5 gallon pails (60 gallons)

All colors shown are approximate and may not reflect sheen or shade precisely, as varying amounts of aggregate will alter light-reflecting properties. Tremco always recommends a test patch to gain final color approval. Different lighting conditions can influence color appearance: for truer color please view in daylight. Some colors may require a minimum quantity. Custom colors are available upon request. Contact Tremco Customer Service for more information.



VULKEM® TRAFFIC COATINGS COLOR CARD

BASE COATS

VULKEM 350 is a durable single-component, polyurethane base coat that is cost effective and ideal for waterproofing concrete slabs, while protecting from water migration in the concrete substrate.

VULKEM 350FC is a two-component, fast-curing, durable polyurethane base coat that offers protection for waterproofing concrete slabs and providing protection from water migration in the concrete substrate.

VULKEM 350NF is a durable single-component, polyurethane base coat that offers protection for waterproofing concrete slabs, while protecting from water migration in the concrete substrate. Quick curing allows for fast turnaround of areas after application. It is also neighbor friendly and ideal for use in areas that need low odor applications.

VULKEM 360NF is a durable two-component, water cured, polyurethane base coat that is ideal for waterproofing concrete slabs, while protecting from water migration in the concrete substrate. It is also neighbor friendly and ideal for use in areas that need low odor applications.

INTERMEDIATE COATS

VULKEM 346 is a high performing, aliphatic, single-component, intermediate, polyurethane wear coat loaded with aggregate to provide excellent impact, abrasion, and chemical resistance.

VULKEM 351 is an aliphatic, single-component, intermediate, polyurethane wear coat used in the Heavy-Duty Pedestrian System. This intermediate coat is ideal for use in areas with high foot traffic.

VULKEM 351NF is a two-component intermediate, polyurethane wear coat used in the Heavy-Duty Pedestrian System. It is neighbor friendly and can be used in areas that need low odor applications. This intermediate coat is ideal for use in areas with high foot traffic.

VULKEM 950NF is a high performing, two-component, intermediate, polyurethane wear coat that is neighbor friendly and ideal for use in areas that need low odor applications. This intermediate coat is loaded with aggregate to give the system excellent impact, abrasion, and chemical resistance.

VULKEM 951NF is a two-component, intermediate, polyurethane wear coat that is aliphatic and neighbor friendly. It is ideal for uses in areas that need low odor applications. This intermediate coat is loaded with aggregate to give the system excellent impact, abrasion, and chemical resistance.

VULKEM EPOXY WEAR COAT is a two-part intermediate, epoxy wear coat loaded with aggregate that gives excellent impact and abrasion resistance. Vulkem Epoxy WC offers enhanced durability vs. urethane-only systems.

TOP COATS

VULKEM 346 is a single-component, polyurethane top coat that is applied after the intermediate coat has cured for use on vehicular decks. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete the Vulkem Traffic Deck Coating System.

VULKEM 351 is a single-component, polyurethane top coat that is aliphatic and is applied after the base coat has cured for use on pedestrian decks. When used in conjunction with the recommended aggregate, creates a tough, aesthetically appealing, skid resistant, wearing surface which completes the Vulkem Traffic Deck Coating System.

VULKEM 351NF is a two-component, polyurethane top coat that is aliphatic and is applied after the base coat has cured for use on pedestrian decks. The topcoat affords excellent abrasion and chemical resistance to complete the Vulkem Traffic Deck Coating System. It is also neighbor friendly and ideal for use in areas that need low odor applications.

VULKEM 950NF is a two-component, polyurethane top coat that is applied after the intermediate coat has cured. The topcoat affords excellent abrasion and chemical resistance to complete the Vulkem Traffic Deck Coating System. It is also neighbor friendly and ideal for use in areas that need low odor applications.

VULKEM 951NF is a high-performance, two-component, polyurethane top coat that is applied after the intermediate coat has cured. Ideal for pedestrian (medium duty) and vehicular (heavy duty) applications. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete the Vulkem Traffic Deck Coating System. It is also neighbor friendly and ideal for use in areas that need low odor applications.

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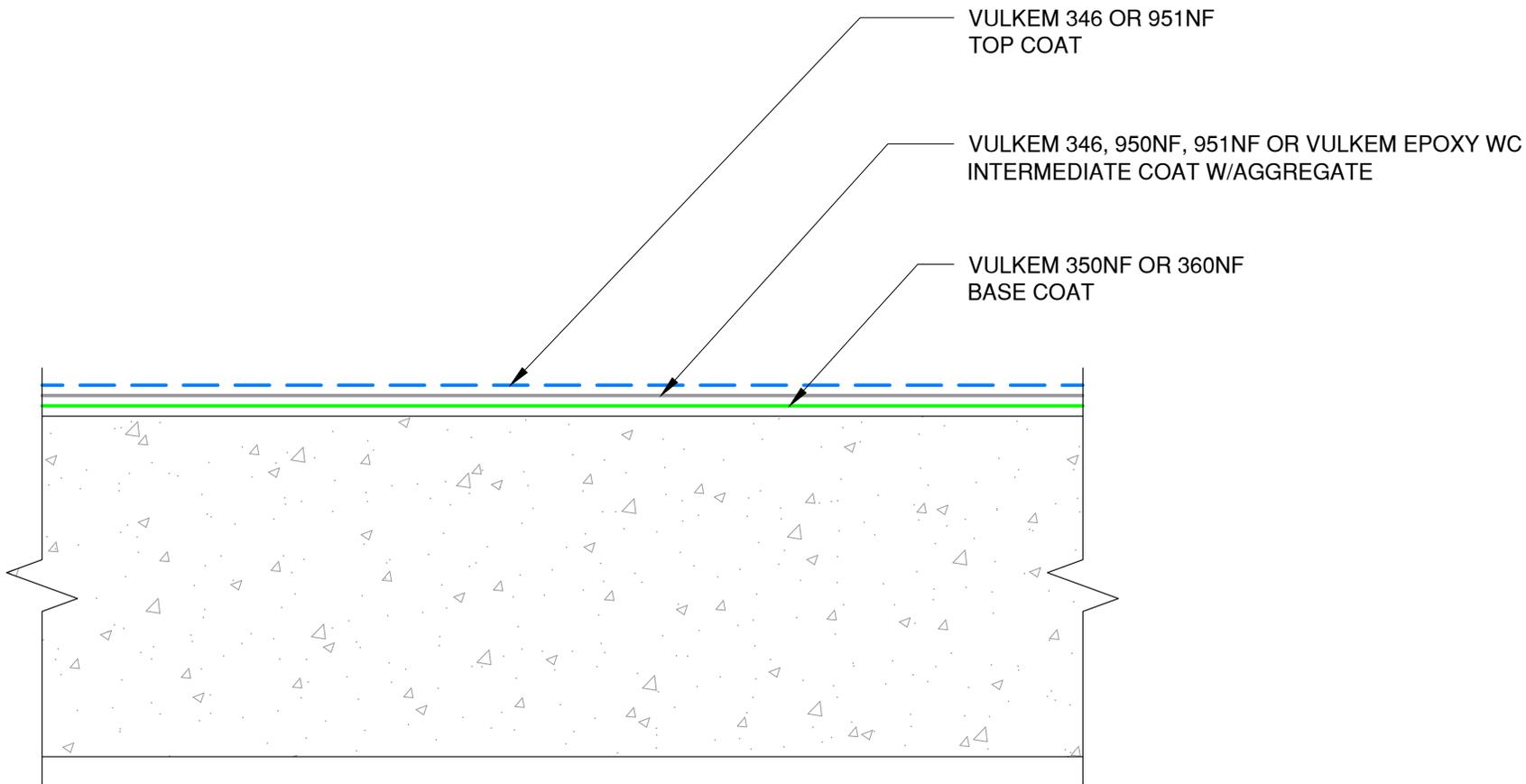
Use of the ® symbol indicates registration with the US Patent & Trademark Office and the Canadian Intellectual Property Office.

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VTCC/0323

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TYPICAL DETAIL DRAWINGS



NOTE: VULKEM 950 NF MAY BE USED AS TOPCOAT IN AREAS WITH NO U.V.

The architecture, engineering, and design of the project using the Tremco products are the responsibility of the project's design professional. All products and systems must comply with local building codes and standards. This detail is for general information and guidance only and Tremco specifically disclaims any liability for the use of this detail. The project design professional determines, in its sole discretion, whether this detail or a functionally equivalent detail is best suited for the project. This detail is subject to change without notice. Contact Tremco to ensure you have the most recent version.

Vulkem Vehicular Coating



Tremco Technical Support: 866-209-2404

Detail: Typical Vehicular Traffic System Deck Coating

Drawn by: KAB

Checked by: EL

Scale: NTS

Date: 1/18/2023

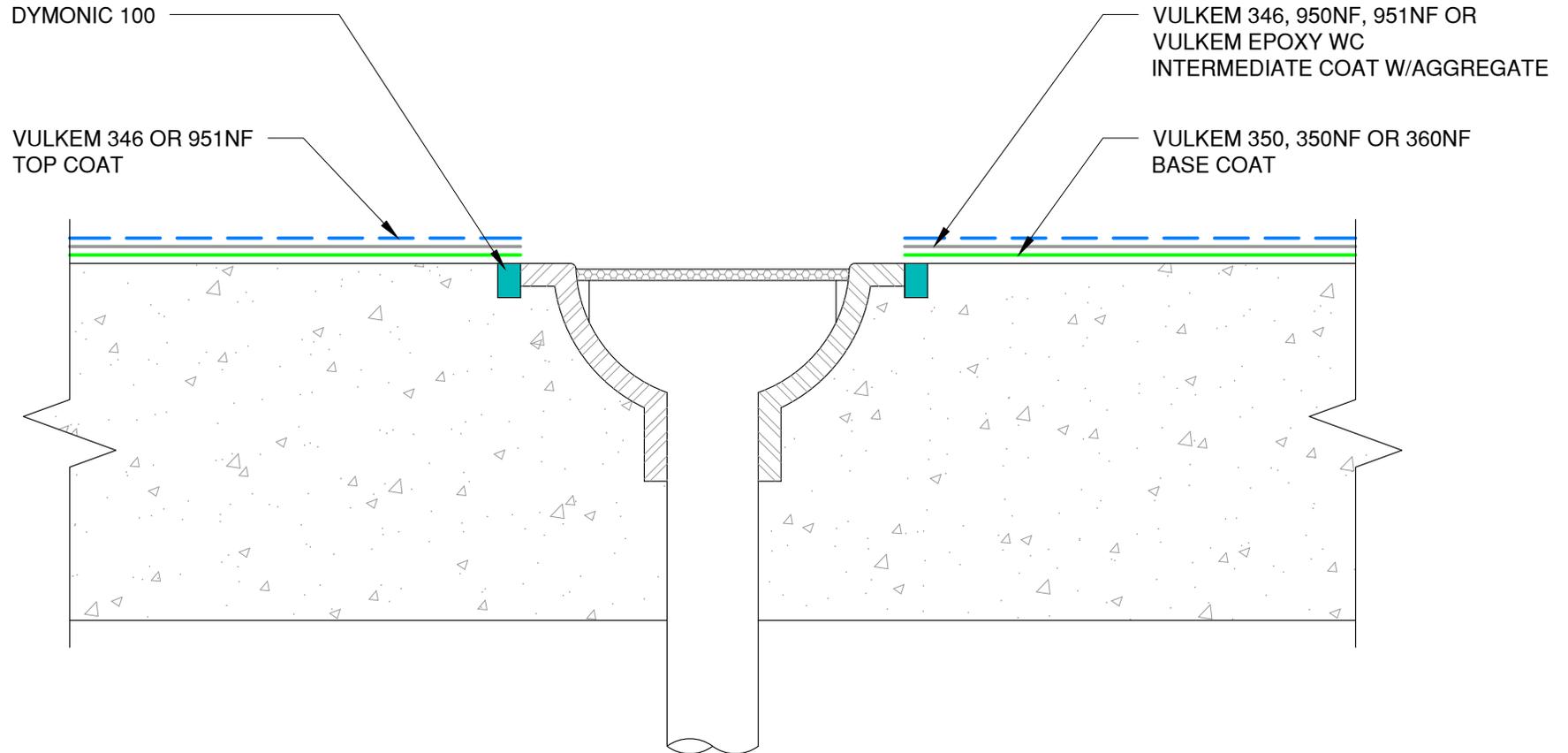
File Name:

DC-V-G-01



Construction Products Group

www.tremcocpg.com



NOTE: VULKEM 950NF MAY BE USED AS A TOPCOAT IN AREAS WITH NO U.V.

THERE ARE SEVERAL TECHNIQUES FOR INSTALLATION AROUND DRAINS. YOU MAY ALSO TAKE THE VULKEM MEMBRANE DOWN INTO THE DRAIN ASSEMBLY. THE DRAIN ASSEMBLY MUST BE BLOCKED IF THIS APPLICATION IS PREFERRED. THE METAL OR PLASTIC DRAIN SHOULD BE SCUFFED AND CLEANED AND PRIMED WITH TREMCO'S TREMPRIME NON POROUS PRIMER.

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Vulkem Vehicular Coating



Tremco Technical Support: 866-209-2404

Detail: Vulkem Vehicular System at Drain

Drawn by: KAB

Checked by: EL

Scale: NTS

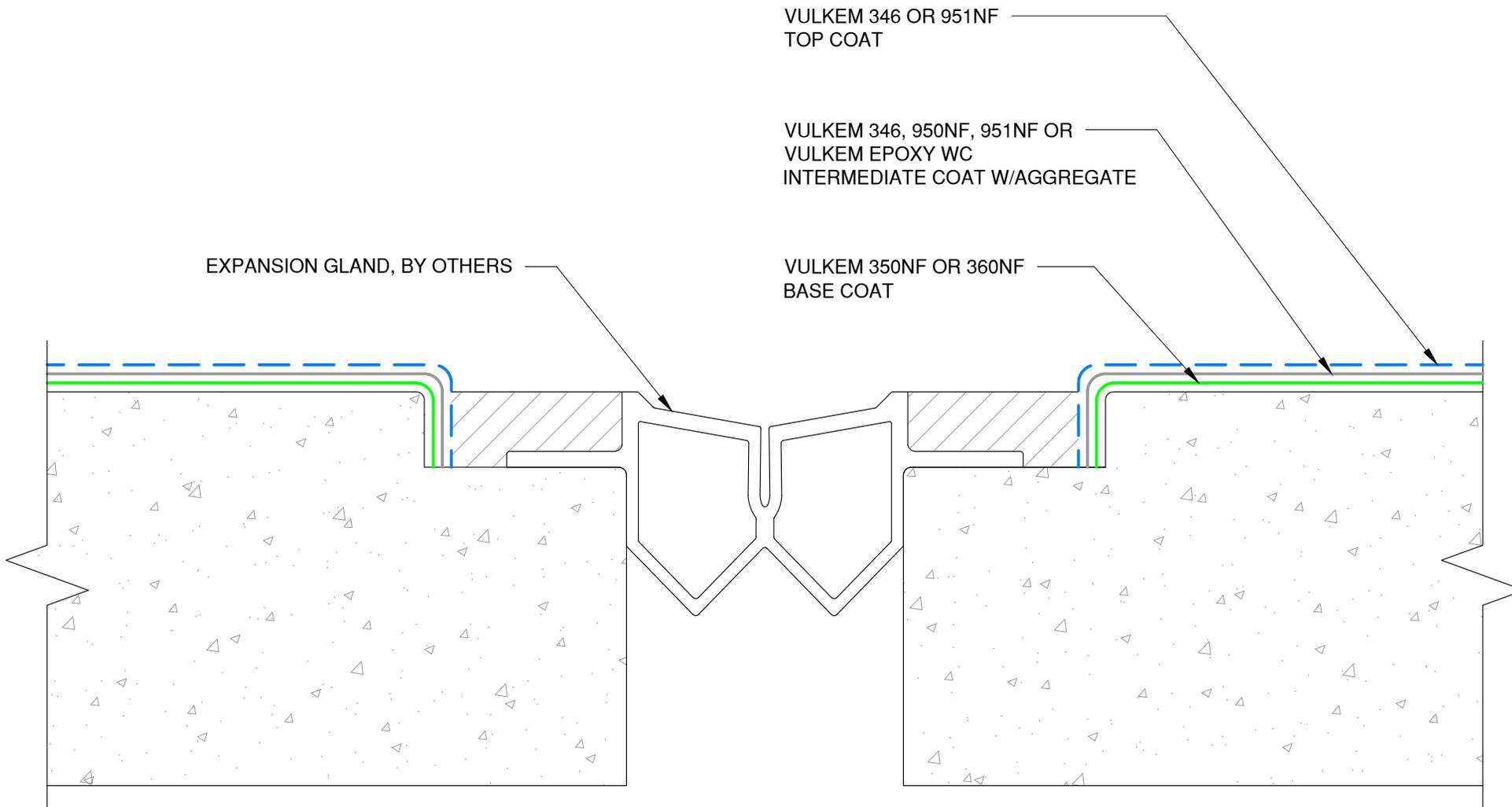
Date: 1/18/2023

File Name:

DC-V-D-01



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NOTE: VULKEM 950 NF MAY BE USED AS TOPCOAT IN AREAS WITH NO U.V.

The architecture, engineering, and design of the project using the Tremco products are the responsibility of the project's design professional. All products and systems must comply with local building codes and standards. This detail is for general information and guidance only and Tremco specifically disclaims any liability for the use of this detail. The project design professional determines, in its sole discretion, whether this detail or a functionally equivalent detail is best suited for the project. This detail is subject to change without notice. Contact Tremco to ensure you have the most recent version.

Vulkem Vehicular Coating



Tremco Technical Support: 866-209-2404

Detail: Vulkem Vehicular System at Floor to Floor Expansion Joint

Drawn by: KAB

Checked by: EL

Scale: NTS

Date: 1/18/2023

File Name:

DC-V-EJ-FF-01



Construction Products Group

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PRODUCT WARRANTY

WARRANTY NUMBER: S-CPG685303-689314

PROJECT NAME & ADDRESS:	Gretna Parking Garage 300 Derbigny Street Gretna LA 70053	CONSTRUCTION MANAGER:	Deron Aksentowitz
OWNER:	Jefferson Parish	GENERAL CONTRACTOR:	Weatherproofing Technologies inc.
ARCHITECT/ ENGINEER:		DATE OF PROJECT SUBSTANTIAL COMPLETION:	estimated 7/15/2024
ISSUER (THE "COMPANY"):	Tremco CPG Inc.		

WHAT IS WARRANTED AND WHAT WILL THE COMPANY DO?

Subject to the terms, conditions, and limitations stated in this warranty, the products (the "Products") will be free from manufacturing defect at the time of purchase, will remain in a watertight condition and will perform as warranted in the manner specified for the stated term(s) measured from the Date of Project Substantial Completion, all as outlined on the attached Exhibit. The Exhibit is an integral part of this warranty.

THE COMPANY WILL SUPPLY LABOR AND MATERIALS TO REPAIR OR REPLACE ANY PRODUCTS THAT DO NOT PERFORM AS WARRANTED HEREUNDER.

The Company will determine in its sole discretion the appropriate scope and method of repair or replacement to remedy any condition covered by this warranty.

The total liability of the Company over the life of this warranty shall not in any event exceed the aggregate dollar value of the original cost of the Products specified in the attached Exhibit.

The term of this warranty may be extended for an additional 2 years with involvement on the project of a Company-approved, third-party consultant ("Consultant") engaged by the Owner or its authorized representative, at the Owner's sole expense. Inspection reports generated by the Consultant shall be made available to the Company and the Owner. All deficiencies identified by the Consultant in the inspection reports must be addressed and corrected in accordance with the project specifications, good waterproofing practices generally accepted in the industry, and the Company's published application instructions. Written confirmation that all deficiencies have been addressed and corrected must be provided by the Consultant and Applicator to the Company and the Owner.

Actions taken to resolve all deficiencies identified shall be specifically noted in the written confirmation.

HOW DO I GET SERVICE?

The Owner must notify the Company within 30 calendar days from the date that the Owner discovered, or should have discovered, the existence of a claim under this warranty, and before beginning any permanent repair, by submitting a service request form at <https://warranties.tremcocpg.com> or by emailing the Warranty Administrator at warrantyadmin@tremcoinc.com. Emailed notice must include the warranty number and a written description of the location, scope, and nature of the alleged failure of the Products to perform as warranted. Photographs or videos of the damaged area are often useful and should also be submitted if available.

The Owner must provide the Company with a reasonable opportunity to investigate the claim and the alleged failure of the Products to perform as warranted herein. The Owner shall have the sole responsibility, at the Owner's cost and expense, to provide the Company with free and full access to the installed Products during regular business hours for purposes of the investigation, including obtaining necessary approval and/or releases from building occupants who may be affected by the investigation and/or by any remedy the Company may provide under this warranty. The Company shall not be responsible for removal of any materials which may cover the Products, or any costs associated with removing or replacing any such materials.

GENERAL REQUIREMENTS:

There will not be any coverage under this warranty unless all the following apply:

- The Products were installed in strict compliance with the project specifications, good waterproofing practices generally accepted in the industry, the Company's published application instructions and technical literature, and any additional written requirements provided by the Company.
- The installation was performed by an Applicator who has received appropriate training prior to installing the Products.
- A pre-construction meeting was conducted with representatives of the Company, the Applicator, the Owner, and the Consultant (if applicable) prior to installation of the Products.
- The Products are used with compatible materials and substrates (in compliance with the Company's published application instructions/technical literature or as otherwise approved in writing by the Company).
- The Products are applied within their stated shelf life.
- The Products are used in applications approved by the Company as suitable.
- The Products are applied to a sound, properly prepared substrate in accordance with published application instructions.
- Request for Issuance of the warranty must be made within 12 months following the "Installation Completion Date " of the Tremco Product (s)
 - The Installation Date of Material(s) by Exhibit will serve as the Project Substantial Completion Date for Warranties filed over 24-months after the date of the installation of the materials.

LIMITATIONS AND EXCLUSIONS:

The Company shall not be responsible for, and this limited warranty does not cover, any loss resulting from any of the following:

- The use of other manufacturers' products unless such products are specifically recommended or approved by the Company in writing in advance of their installation, in connection with the use of the Products.
- Any repairs, replacements, penetrations, or alterations of the Products by any person or entity other than authorized representatives of the Company without prior written consent of the Company.

- Water passing through any portion of a structure or building component other than directly through the Products due to a failure in the Products and/or connections between the Products (so long as the connections are Company Products), or any interior moisture, vapor, or condensation.
- Construction, design, specification, storage, application, exposure, installation practices, use of the Products, or use of material, that is not in compliance with the Company's published literature.
- Unauthorized changes in the Products' details or specifications for the project that were not reviewed and approved in advance by the Company in writing.
- Failure to maintain the building and the Products with reasonable care.
- Mold, mildew, insects, pests, fungi, algae, bacteria, air quality, and similar conditions.
- Improper design, engineering, application installation or workmanship of any portion or component of the Products or the structure; or failure, distortion or structural movement of the walls, foundation, or any other portion or component of the structure, including, but not limited to, movement, cracking, deflection, settling of the building or movement of the framing members.
- Impact with objects, hurricanes, tropical storms, tornadoes, high winds, hailstorms, earthquakes, sandstorms, floods, natural disasters, fires, vandalism, war, terrorism, animals, other similar acts of God or nature, force majeure events, or significant or unintended immersion or pooling of water.
- Abuse, misuse, neglect, damage, or negligence by the Owner, the Applicator, the general contractor, or other trades performing work on the project, or any third party.
- Change in principal usage or amount of usage of structure without prior written approval of the Company.
- Intermixing of the Products with other chemicals or materials not specifically required by the Company's specifications or application instructions.

If, at the Owner's request, the Company performs any services or supplies any materials as a mitigation or remediation measure in connection with any unwarranted loss described above, the Company shall be entitled to compensation for such services or materials.

The Company makes no warranty with respect to appearance or color. No representative of the Company has the authority to make any representations, warranties, or promises except as stated herein.

No waiver by the Company of any limitation, term or condition of this warranty shall operate as a waiver of any other limitation, term or condition applicable to any claim, whether of like or different nature. No delay or failure on the Company's part to enforce any right or claim, which it may have hereunder, shall constitute a waiver of such right or claim.

If any part of this warranty shall be determined to be invalid, then such portion shall be deemed severed from the warranty and the remaining terms, exclusions and limitations shall apply.

The Company's obligations under this warranty are expressly conditioned upon receipt of full payment for the Products. Any delay in full payment to the Company shall not extend the warranty term.

This warranty is issued to the above-named Owner and is not assignable or transferable, except upon the express written consent of the Company.

THE COMPANY UNDERTAKES NO RESPONSIBILITY FOR THE QUALITY OF THE PRODUCTS EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY. IN OTHER WORDS, THE COMPANY EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY.

THE COMPANY ASSUMES NO RESPONSIBILITY THAT THE PRODUCTS WILL BE FIT FOR ANY PARTICULAR PURPOSE FOR WHICH THE PRODUCTS MAY BE PURCHASED, EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY. IN OTHER WORDS, THE COMPANY EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE.

THE COMPANY MAKES NO OTHER OR FURTHER WARRANTIES IN CONNECTION WITH THE PRODUCTS EXCEPT AS EXPRESSLY STATED IN THIS WARRANTY DOCUMENT.

THE COMPANY WILL NOT BE RESPONSIBLE UNDER THIS LIMITED WARRANTY FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING IN CONTRACT OR TORT (INCLUDING INTENTIONAL, NEGLIGENCE OR OTHERWISE), FOR BREACH OF WARRANTY OR UNDER ANY OTHER THEORY OF LIABILITY, WHETHER OR NOT ARISING FROM OR RELATING TO, DIRECTLY OR INDIRECTLY, THIS WARRANTY, OR THE PERFORMANCE OF, DEFECTS IN, OR IN ANY WAY CONNECTED WITH, THE PRODUCTS COVERED BY THIS WARRANTY. THE COMPANY WILL HAVE NO LIABILITY FOR, AND EXPRESSLY DISCLAIMS LIABILITY FOR, ANY OTHER DAMAGE TO THE BUILDING OR THE CONTENTS OF THE BUILDING AND FOR ANY OTHER CLAIMED DAMAGES, LOSSES, COSTS AND EXPENSES OTHER THAN AS EXPRESSLY SET FORTH IN THIS WARRANTY.

THIS REMEDY EXPRESSLY SET OUT IN THIS WARRANTY WILL BE THE EXCLUSIVE REMEDY FOR ALL PERSONS ENTITLED TO WARRANTY COVERAGE AS DESCRIBED ABOVE. NO OTHER REMEDY SHALL BE APPLICABLE.

SOME JURISDICTIONS LIMIT OR DO NOT ALLOW THE DISCLAIMER OF CERTAIN REMEDIES OR THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE EXCLUSIONS AND LIMITATIONS OF REMEDIES AND DAMAGES IN THIS SECTION FULLY APPLY TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW.

The terms of this warranty may not be altered, modified, or supplemented except in a writing signed by an officer of the Company that expressly refers to this warranty document and number.

In the event the Owner: (i) fails to provide the Company with timely notice as described above, (ii) fails to provide required access to the installed Products, (iii) undertakes or permits any actions that cause or contribute to failures, such as unauthorized repairs or perforations of the Products, or (iv) otherwise fails to fulfill its responsibilities as described herein, the Company reserves the right to void this warranty upon written notice to the Owner.

To expedite processing, this document may be completed and delivered in electronic form only. This limited warranty applies only to Products installed in the United States and Canada. Under the Quebec Consumer Protection Act, the Company must provide a warranty to consumers, as defined in the Act, that the Company's products shall be fit for the purpose for which such products of that kind are ordinarily used and that the Products must be durable in normal use for a reasonable length of time, having regard to their price and other factors. For more information about your rights if you are a consumer as defined in the Act, you should consult the Quebec Consumer Protection Act at <https://www.educaloi.qc.ca/en/capsules/legal-warranty-automatic-protection-consumers>.

Since the Products are building materials and are not intended to be sold to a "consumer" except as part of real estate or as a major addition thereto, this warranty shall not apply to any party constituting a "consumer" as such term is defined by the Magnuson-Moss Warranty Act.

EXHIBIT

Subject to the terms, conditions, and limitations stated in this warranty, the Company warrants to the Owner:

Warranty No.: S-CPG685303-689314

Vehicular Traffic Coating System (Common Applications: Drive lanes, parking stalls, ticket spitters)

That the Product(s) 1) will not crack due to normal exposure or normal expansion or contraction, and 2) will not fail cohesively or adhesively under conditions of normal wear and tear where movement and/or cracking of the underlying substrate does not exceed 1/16 of an inch, for the period stated in the table below from the Date of Project Substantial Completion.

The Vehicular Traffic Coating System is eligible for an extension of the warranty period under the original terms and conditions, provided (i) the system has been properly maintained according to published instructions and has not been subject to abuse or misuse and/or damage by any acts or conditions that are outside coverage under the terms of the original warranty and (ii) the Owner completes, at its expense and to the Company's reasonable satisfaction, all recommended maintenance to the system, including without limitation application of a new Vulkem® urethane top coat to the Vulkem urethane and Vulkem urethane/epoxy system and application of prescribed Tremco® PUMA technology components to the Vulkem EWS system. Upon written request of the Owner made at least thirty days prior to the expiration of the original warranty term, the Company will inspect the system to determine if the warranty will be extended, in its sole discretion.

The Company's obligations and Owner's rights shall be void if the system is ruptured, cracked or otherwise damaged by any misuse or abnormal use or conditions, including but not limited to, industrial truck or heavy equipment traffic, snow plowing, building alterations or structural defects, surface scaling or spalling of underlying concrete or substrates or any cause other than defects in the system as manufactured and supplied.

Warranty Issued

Applicator:	Weatherproofing Technologies Inc - WTI	Installation Completion Date:	estimated 7/15/2024
Consultant (if applicable):		Warranty Term:	5 years
Product:	Vulkem 350/346/346	Linear/Square Footage:	51400 sq ft
Product:	MSUP (Multi Surface Urethane Primer) 2 coats		



Construction Products Group

POWER OF ONE WARRANTY ASSURANCE

Congratulations on Your Tremco CPG Sample Warranty!

Your Tremco Construction Products Group (CPG) System Sample Warranty was requested by your Tremco CPG Sales Representative to meet your project's needs. The system will be installed with premium Tremco materials, and every effort will be made to ensure long-lasting performance, when properly maintained (see product data sheet and application instruction sheets located at www.tremcosealants.com, on the product pages). The benefit of maintenance, preventive or otherwise, will ensure that your system continues to perform long after the warranty has expired.

The warranty sample is designed to show you what is covered under the product or system you have proposed to use. Tremco CPG will supply labor and materials to repair or replace any products that do not perform as warranted. Tremco CPG will determine in its sole discretion the appropriate scope and method of repair or replacement to remedy any condition covered by this warranty.

When to Notify Tremco CPG:

To convert your sample warranty into an issued warranty (job installed):

1. Email Tremco CPG's Warranty Department at warrantyadmin@tremcoinc.com
2. We will walk you through the steps of converting your warranty
3. Special issued warranties (NDL, Workmanship, J&S)
 - Paperwork and approvals must be completed prior to issuance of the sample
 - Approvals after the job is completed move at a faster pace

For technical questions on product application or maintenance, please call 866-209-2404.

Warranty Disclaimer

Please review your warranty document for any inaccuracies. Change requests must be submitted in writing in the warranty messaging system, within three business days of the date of this warranty issuance.

Thank You!
The Tremco CPG Warranty Team

**PRODUCT
TECHNICAL
DATA SHEETS**

PRODUCT DESCRIPTION

Dymonic® 100 is a single-component, medium-modulus, non-sag polyurethane sealant. Dymonic 100 offers a high-performance, high-movement, durable, flexible seal that performs excellently in moving joints and exhibits tenacious adhesion to substrates once fully cured.

BASIC USES

Typical applications for Dymonic 100 include expansion and control joints, precast concrete panel joints, perimeter caulking (windows, doors, and panels), aluminum, masonry, and vinyl siding. Dymonic 100 is also an excellent choice as a fluid applied flashing material in rough opening perimeters for fenestration/window, door and curtain wall applications. Dymonic 100 is suitable for water immersion applications and will not out gas.

FEATURES & BENEFITS

Dymonic 100 has been formulated with an innovative polymer technology, similar to TREMproof® 250GC and Vulkem® 45SSL, that allows it to be highly versatile and grants its unique capability to adhere to damp or green concrete without outgassing. The skin time of Dymonic 100 is 2 hours and the tack-free time is 6 to 8 hours. This significantly reduces dirt attraction and improves the overall aesthetic look.

Dymonic 100 has a movement capability of +100/-50% in typical field conditions with excellent performance in moving joints. The formula is low-VOC and UV-stable, meaning Dymonic 100 will not crack, craze, or yellow under extreme UV exposure. Additionally, Dymonic 100 is jet fuel-resistant and compatible with many common construction substrates.

- Compatible with and can be coated over with Tremco's Vulkem Deck Coatings, ExoAir® Air Barrier products and the cold, fluid-applied TREMproof® line of below-grade waterproofing products
- Accepted for use over Nudura Insulated Concrete Forms (ICF)

There are 21 standard color options available for Dymonic 100, with the option of painting over the sealant.

Dymonic 100 meets or exceeds the requirements of the following specifications:

- ASTM C920 Type S, Grade NS, Class 50, Use NT, T, M, A, O, I
- U.S. Federal Specification TT-S-00230C, Class A, Type II
- CAN/CGSB-19,13-M87
- International Code Council (ICC) Section R703.8 Flashing
- AAMA 714-15 Specification for Liquid-Applied Flashing
- NFPA 285 Listed Component

Accepted fire rated systems: FF-D-1186, FW-D-1117, HW-D-1122, WW-D-1200, and BW-S-0006

AVAILABILITY

Immediately available from your local Tremco Sales Representative, Tremco Distributor, or Tremco Warehouse in 10.1 oz (300 mL) cartridges and 20 oz (600 mL) sausages.

COLORS

Available in Almond, Aluminum Stone, Anodized Aluminum, Beige, Black, Bronze, Buff, Dark Bronze, Gray, Gray Stone, Hartford Green, Ivory, Light Bronze, Limestone, Natural Clay, Off White, Precast White, Redwood Tan, Sandalwood, Stone, and White.



LIMITATIONS

Use with adequate ventilation. Always utilize the accompanying SDS for information on Personal Protective Equipment (PPE) and Health Hazards. Not recommended for use in chlorinated, potable, heavy or waste water. Although Dymonic 100 is paintable, this does not imply adhesion to and compatibility with all paints. Consult Tremco Technical Bulletin No. S-09-05 or Tremco Technical Services for more information.

WARRANTY

A repair or replacement warranty is available on all Tremco products. Visit <https://www.tremcosealants.com/warranties/> for details.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL RESULTS
Rheological Properties	ASTM C639	Non-sag (NS), 0" of sag in channel
Hardness Properties	ASTM C661	40 ± 5
Weight Loss	ASTM C1246	Pass
Skin Time	ASTM C679	2 to 3 hr
Tack Free Time	73.4°F (23°C) 50% RH	6 to 8 hr
Stain and Color Change	ASTM C510	Pass
Adhesion to Concrete	ASTM C794	35 pli
Adhesion to Concrete After Immersion	ASTM C794	30 pli
Adhesion to Green Concrete	ASTM C794	>25 pli
Adhesion to Damp Concrete	ASTM C794	>20 pli
Effects of Accelerated Aging	ASTM C793	Pass
Movement Capability	ASTM C719	± 50%
Movement Capability	ASTM C719 (Modified)	+100/-50%
Tensile Strength	ASTM D412	350 to 450 psi
% Elongation	ASTM D412	800 to 900%
Modulus at 100%	ASTM D412	75 to 85 psi
Tear Strength	ASTM D412	65 to 75 psi
Service Temperature		-40 to 180 °F (-40 to 82 °C)
Application Temperature		40 to 100 °F (4 to 37 °C) *
Smoke Development, Fire Spread	ASTM E84	5, 5
Smoke Development, Fire Spread	CAN S102	10, 10
Fire Resistance of Assembly	NFPA 285	Pass
Crack Bridging	ASTM C1305	Pass
Nail Seal Ability	ASTM D1970 Section 7.9	Pass

*For temperatures below 40 °F, please refer to the Technical Bulletin, Cold Temperature Sealant Application Recommendations.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

D100-DS/1122



Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



tremcosealants.com | 800.321.7906



Construction Products Group

3735 Green Rd. | Beachwood, OH 44122
800.321.7906 | tremcocpg.com

RUST-OLEUM®
HIGH PERFORMANCE
 INDUSTRIAL COATINGS

RUST-OLEUM® 2300 SYSTEM TRAFFIC ZONE STRIPING PAINT

DESCRIPTION AND USES

Rust-Oleum® Traffic Zone Striping Paint is a single-component, water-based acrylic coating for large striping jobs. It dries fast (in 30 minutes), and can accept traffic after 8 hours.

It is ideal for large striping jobs on interior or exterior concrete or asphalt surfaces such as commercial parking lots, stadiums and athletic facilities.

MPI #97 Certified. Refer to the MPI website for the most current listing of MPI certified products.

PRODUCTS

FLAT FINISH

1-Gallon	5-Gallon	DESCRIPTION
2326402	----	Blue
2348402	2348300	Yellow
2391402	2391300	White
243276	----	Red
246774	----	Black

SEMI-GLOSS FINISH

1-Gallon	5-Gallon	DESCRIPTION
283868	----	Traffic Red
283900	----	Traffic Blue
283902	202475	Traffic Yellow
283903	202357	Traffic White
283906	----	Traffic Black
283907	----	Bike Lane Green

PRODUCT APPLICATION

SURFACE PREPARATION

ALL SURFACES: Remove all dirt, grease, oil, salt and chemical contaminants by washing the surface with Krud Kutter® Original Cleaner Degreaser or other suitable cleaner. Rinse thoroughly with fresh water and allow to fully dry.

APPLICATION

Apply only when the air and surface temperatures are between 50-90°F (10-32°C) and the surface temperature is at least 5°F (3°C) above the dew point.

EQUIPMENT RECOMMENDATIONS

BRUSH: For quick touch-ups and small areas such as parking curbs.

ROLLER: Use a good quality, 3/4 inch nap roller the appropriate width for the stripe required.

STRIPING MACHINE: Apply by bulk striping machine. Rust-Oleum Striping Machine (product #2395000) is not compatible.

THINNING

Thinning not recommended. If necessary to ease brushing or rolling, up to 5% water may be added.

CLEAN-UP

Soap and water.

ACRYLIC	TECHNICAL DATA	RO-23
RUST-OLEUM® HIGH PERFORMANCE INDUSTRIAL COATINGS	RUST-OLEUM® 2300 SYSTEM TRAFFIC ZONE STRIPING PAINT	

PHYSICAL PROPERTIES

		Flat Finish	Semi-Gloss Finish
Resin Type		Modified Acrylic	Modified Acrylic
Pigment Type		Varies with color	Varies with color
Solvents		Water, benzoic acid ester, glycol ether, methyl alcohol	
Weight	Per Gallon	11.1-13.0 lbs.	8.7-10.2 lbs.
	Per Liter	1.33-1.56 kg	1.04-1.22 kg
Solids	By Weight	55.3-69.9%	36.9-41.9%
	By Volume	40.3-51.0%	31.4-33.1%
Volatile Organic Compounds		<100 g/l (0.73 lbs./gal.)	<100 g/l (0.73 lbs./gal.)
Recommended Dry Film Thickness (DFT) Per Coat		3.0-5.0 mils (75-125µ)	3.0-5.0 mils (75-125µ)
Wet Film to Achieve DFT (unthinned material)		7.5-10.0 mils (187.5-250µ)	9.0-15.0 mils (225-375µ)
Practical Coverage at Recommended DFT (assumes 15% material loss) †		330-690 linear ft./gal. 4 in. stripe	250-450 linear ft./gal. 4 in. stripe
Dry Times at 70-80°F (21-27°C) and 50% Relative Humidity	Tack-free	30 minutes	30 minutes
	Handle	4 hours	4 hours
	Recoat	After 8 hours	After 8 hours
Shelf Life		5 years, Protect From Freezing	
Safety Information		For additional information, see SDS	

†Coverage is dependent on surface porosity
Calculated values are shown and may vary slightly from the actual manufactured material.

The technical data and suggestions for use contained herein are correct to the best of our knowledge, and offered in good faith. The statements of this literature do not constitute a warranty, express, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.



TECHNICAL DATA SHEET

VULKEM® 350/346/346 Elastomeric, Waterproof Traffic Deck Coating System

PRODUCT DESCRIPTION

Vulkem® 350/346/346 is a modified polyurethane traffic deck coating system composed of a base coat (350), heavy duty intermediate coat (346) and a top coat (346). This unique waterproofing system is designed to have tenacious adhesion, extreme impact, and abrasion resistance along with remarkable chemical stability. The elastomeric properties of the system's components enable the complete assembly to give and work with the concrete slab, bridging the shrinkage cracks.

Vulkem 350 Base Coat is a single-component urethane membrane that bonds firmly to clean, dry concrete and metal. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16" (1.5 mm). If cut or damaged, Vulkem 350 will prevent water migration between itself and the substrate. Vulkem 350 is available in roller (R) and in self-leveling (SL) grade for vertical and horizontal application.

Vulkem 346 Intermediate Coat is an aliphatic one-component urethane that is applied after the Vulkem 350 Base Coat is cured. The intermediate coat is loaded with aggregate to give the system excellent impact, abrasion, and chemical resistance.

Vulkem 346 Top Coat is an aliphatic one-component polyurethane that is applied after the Vulkem 346 intermediate coat has cured. Interlaminary adhesion to the Vulkem 346 is exceedingly strong. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete this Vulkem Traffic Deck Coating System.

BASIC USES

Vulkem 350/346/346 is a cold-applied traffic deck coating system designed for waterproofing concrete slabs and protecting occupied areas underneath from water damage. Additionally, the system will protect the concrete from the damaging effects of water, deicing salts, chemicals, gasoline, oils, and anti-freeze.

FEATURES & BENEFITS

- Fast cure through time allows for use 72 hr after installation
- Mildew and fungus resistance safeguard concrete surfaces against environmental contaminants
- Excellent durability and UV resistance extends the useful life of vehicular systems
- Recoatable and compatible with other Tremco sealants and expansion joints, which enhance waterproofing protection with full system compatibility

AVAILABILITY

Immediately available from your local Tremco Sales Representative, Tremco distributor, or Tremco warehouse.

PACKAGING

Vulkem 350: 5-gal (18.9-L) pails, 55-gal (208.2-L) drums

Vulkem 346: 5-gal (18.9-L) pails, 55-gal (208.2-L) drums

COLORS

Vulkem 346 is available in Gray, Limestone, Slate Gray, *Black, *White, *Beige and *Maple. Made-to-order and special colors are also available upon request.

*Denotes special color.

INSTALLATION

Concrete shall be water-cured and attain a 4000 psi minimum compressive strength. Concrete finish shall be a light steel trowel followed by a fine-hair broom, or equivalent ICRI #2-#4 finish. Moisture content in the concrete must be lower than 4.5% as measured by a Tramex CME Moisture Meter. Depending on concrete construction and job site location, additional concrete testing may be required. Please contact your local Tremco Sales or Technical Representative.

Please refer to the Vulkem 350/346/346 Application Instructions for complete application details. The techniques involved may require modification to adjust the jobsite conditions. Consult your Tremco Sales Representative or Tremco Technical Service for site conditions and requirements.

APPLICABLE STANDARDS

Conforms to:

- ASTM C957
- UL 790 – Class A Rating for non-combustible substrates
- CSA S413-14

LIMITATIONS

- Do not apply to damp or contaminated substrates.
- Use with adequate ventilation.
- Substrate must be at least 5 °F (3 °C) above the measured dew point temperatures to avoid dew point conditions.

WARRANTY

A repair or replacement warranty is available on all Tremco products. Visit <https://www.tremcosealants.com/warranties/> for details.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	VULKEM 350	VULKEM 346	VULKEM 346
Flash Point	Set-A-Flash	112 °F (44.4 °C)	85 °F (29 °C)	85 °F (29 °C)
% Solids	ASTM D1353	79%	72%	72%
Drying time @ 75°F, 50% RH	ASTM D1640	25 mil film, 12 hr	10-12 mil film, 6 to 8 hr	10-12 mil film, 6 to 8 hr
Open to vehicular traffic		N/A	72 hr after cure	72 hr after cure
Weathering	ASTM D822	N/A	No effect	No effect
Salt Spray	ASTM B117	N/A	No effect	No effect
Viscosity	Brookfield C&P	8000 to 10000 cps	2000 to 3000 cps	2000 to 3000 cps
Elongation	ASTM D412	1040%	120%	120%
Tensile Strength	ASTM D412	320 psi	2800 psi	2800 psi
Hardness (Shore A)	ASTM 2240	60	85 to 95	85 to 95
Adhesion (Peel Strength)	ASTM D903	Unprimed concrete, 30 pil, 100% cohesive	100% cohesive failure	100% cohesive failure
Adhesion (Peel-Off)	ASTM D4541	280 psi	N/A	N/A
Abrasion Resistance (1000 cycles)	ASTM D4060	N/A	50 mg	50 mg
Accelerated Aging	ASTM D573	No loss of elongation or tensile strength	No loss of elongation or tensile strength	No loss of elongation or tensile strength

*Accelerated aging test. 1 daily cycle of UV and water spray greatly exceeds 1 day of real world exposure. Contact Tremco Technical service or your local sales representative for more information.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

V350346346-DS

Tremco Construction Products Group (CPG) brings together the Commercial Sealants & Waterproofing and Roofing & Building Maintenance divisions of Tremco CPG Inc.; Dryvit and Willseal brands; Nudura Inc.; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc.; Weatherproofing Technologies Canada, Inc.; and Pure Air Control Services, Inc.



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TECHNICAL DATA SHEET

TREMprime® MULTI- SURFACE URETHANE PRIMER

Urethane Tie-In Primer

PRODUCT DESCRIPTION

TREMprime Multi-Surface Urethane Primer is a two-component, quick drying, epoxy-based, VOC-compliant primer primarily for use with Vulkem® urethane deck coatings and liquid-applied waterproofing products. It may also be used with Vulkem and Tremco branded urethane sealants.

BASIC USES

Porous surfaces, interlaminary, urethane coatings. Low-VOC (<60 g/L), two-part epoxy primer used to condition and prep porous surfaces and existing coatings for application of a new coating layer. Apply with a short nap roller or brush evenly to the surface. Primer must dry completely before coating application as indicated by turning from milky-white to completely clear.

FEATURES & BENEFITS

- Improved wear and chemical resistance
- Reduced water and salt absorption
- Water-based, low odor
- Resistant to mild acids
- Can be used as a primer under epoxy or urethane coatings
- Resistant to gasoline and other solvent spills

COVERAGE RATE

Approximately 200-300 ft²/gal

PACKAGING

3-gal (11.4-L) kits:

Part A: 2-gal (7.6-L) can

Part B: 1-gal (3.8-L) can

AVAILABILITY

Immediately available from your local Tremco Sales Representative, Tremco distributor, or warehouse.

STORAGE

Store indoors, protected from moisture, at temperatures between 45 °F and 110 °F (7 °C and 43 °C) and out of direct sunlight.

LIMITATIONS

- Protect from freezing.
- All surfaces must be sound, clean, dry, and free from contamination. A thorough wire brushing, grinding, sandblasting, or solvent cleaning may be required to expose clean, sound, virgin surfaces.
- Any questions regarding drying times, coverage rates, and unique application techniques regarding the individual primers should be directed to Tremco Technical Services or your local Tremco Sales Representative.
- Do not apply over contaminated or damp surfaces.
- Do not thin.
- Substrate must be at least 5 °F (3 °C) above the measured dew point temperatures to avoid dew point conditions.

WARRANTY

A repair or replacement warranty is available on all Tremco products. Visit <https://www.tremcosealants.com/warranties/> for details.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TYPICAL VALUE
Mix Ratio (A: B by Volume)	2:1
Total Solids	20%
VOC Content	68 g/L
Pot Life	4 hrs
Storage Temperature Range	45 °F (7 °C) minimum to 110 °F (43 °C) maximum

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

TMSUP-DS/0922

Tremco Construction Products Group (CPG) brings together the Commercial Sealants & Waterproofing and Roofing & Building Maintenance divisions of Tremco CPG Inc.; Dryvit and Willseal brands; Nudura Inc.; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc.; Weatherproofing Technologies Canada, Inc.; and Pure Air Control Services, Inc.



tremcosealants.com | 800.321.7906



Construction Products Group

3735 Green Rd. | Beachwood, OH 44122
800.321.7906 | tremcocpg.com



TECHNICAL DATA SHEET

VULKEM® 346

Single Component Polyurethane
Intermediate or Top Coat

PRODUCT DESCRIPTION

Vulkem 346 is an aliphatic one-component polyurethane intermediate or top coat. Interlaminary adhesion to Vulkem 346 is exceedingly strong. Both coats afford excellent abrasion resistance, UV stability and chemical resistance.

BASIC USES

Vulkem 346 is ideal for vehicular decks, high-wear turning and drive lanes, ticket spitters and similar applications requiring an elastomeric waterproofing system.

AVAILABILITY

Immediately available from your local Tremco Sales Representative, Tremco Distributor or Tremco Warehouse.

PACKAGING

Vulkem 346: 5-gal (18.9-L) pails, 55-gal (208.2-L) drums

COLORS

Vulkem 346 is available in Gray, Limestone, Slate Gray, *Black, *White, *Beige, and *Maple. Made-to-order and special colors are also available upon request.

*Denotes special color.

LIMITATIONS

- Do not apply to damp or contaminated surfaces.
- Use with adequate ventilation.

INSTALLATION

Refer to the instructions for your specific system/application for installation details. The techniques involved may require modification to adjust to jobsite conditions. Consult your Tremco Representative for specific design requirements.

WARRANTY

A repair or replacement warranty is available on all Tremco products. Visit <https://www.tremcosealants.com/warranties/> for details.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	VULKEM 346
Flash Point	Set-A-Flash	85 °F (29 °C)
% Solids (by Weight)	ASTM D1353	72%
Drying Time @ 75 °F, 50% RH	ASTM D1640	15 mil film, 6 to 8 hr
Weathering	ASTM D822	N/A
Salt Spray	ASTM B117	N/A
Viscosity	Brookfield C&P	2000 to 3000 cps
Elongation	ASTM D412	120%
Tensile Strength	ASTM D412	2800 psi
Hardness (Shore A)	ASTM D2240	85 to 95
Adhesion (Peel Strength)	ASTM D903	100% cohesive failure
Adhesion (Pull-Off)	ASTM D4541	N/A
Abrasion Resistance (1000 cycles)	ASTM D4060	50 mg
Accelerated Aging	ASTM D573	No loss of elongation or tensile strength
Tear Strength	ASTM D624	309 pli

* Accelerated aging test. 1 daily cycle of UV and water spray greatly exceeds 1 day of real world exposure. Contact Tremco Technical Service or your local sales representative for more information.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

V346-DS/0323

Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



tremcosealants.com | 800.321.7906



Construction Products Group

3735 Green Rd. | Beachwood, OH 44122
800.321.7906 | tremcocpg.com



TECHNICAL DATA SHEET

VULKEM® 350

Single Component Polyurethane Base Coat

PRODUCT DESCRIPTION

Vulkem 350 Base Coat is a single-component urethane membrane that bonds firmly to clean, dry concrete and metal. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16" (1.5 mm). If cut or damaged, Vulkem 350 will prevent water migration between itself and the substrate. Vulkem 350 is available in roller (R) and in self-leveling (SL) grade for vertical and horizontal application.

BASIC USES

Vulkem 350 is ideal for plazas, recreation decks, balconies, mechanical rooms, stadiums, athletic surfaces and similar applications requiring an elastomeric waterproofing system.

AVAILABILITY

Immediately available from your local Tremco Sales Representative, Tremco Distributor or Tremco Warehouse.

PACKAGING

Vulkem 350: 5-gal (18.9-L) pails, 55-gal (208.2-L) drums

LIMITATIONS

- Do not apply to damp or contaminated surfaces.
- Use with adequate ventilation.

INSTALLATION

Refer to the instructions for your specific system/application for installation details. The techniques involved may require modification to adjust to jobsite conditions. Consult your Tremco Representative for specific design requirements.

WARRANTY

A repair or replacement warranty is available on all Tremco products. Visit <https://www.tremcosealants.com/warranties/> for details.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	VULKEM 350
Flash Point	Set-A-Flash	112°F (44.4°C)
% Solids (by Weight)	ASTM D1353	79%
Drying Time @ 75 °F, 50% RH	ASTM D1640	25-40 mil film, 12 hr
Weathering	ASTM D822	N/A
Salt Spray	ASTM B117	N/A
Viscosity	Brookfield C&P	8000 to 10000 cps
Elongation	ASTM D412	1040%
Tensile Strength	ASTM D412	320 psi
Hardness (Shore A)	ASTM D2240	60
Adhesion (Peel Strength)	ASTM D903	Unprimed concrete, 30 pli, 100% cohesive failure
Adhesion (Pull-Off)	ASTM D4541	280 psi
Abrasion Resistance (1000 cycles)	ASTM D4060	N/A
Accelerated Aging	ASTM D573	No loss of elongation or tensile strength

* Accelerated aging test. 1 daily cycle of UV and water spray greatly exceeds 1 day of real world exposure. Contact Tremco Technical Service or your local sales representative for more information.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

V350-DS/0323



Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



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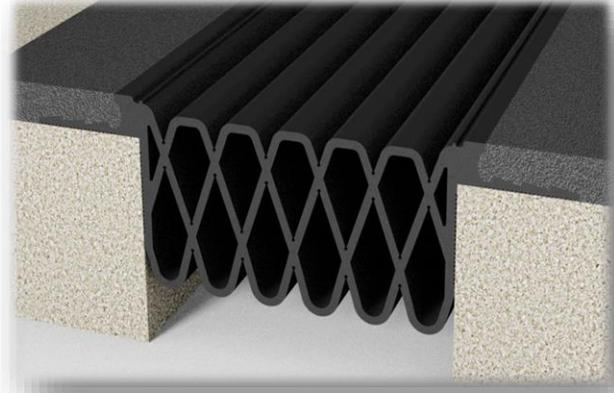
Construction Products Group

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WaboCrete® Membrane Gen II

Gen II Elastomeric Membrane sealing expansion joint system

Features	Benefits
<ul style="list-style-type: none"> • Watertight applications 	The heavy-duty membrane seal combined with WaboCrete® Parking Series elastomeric concrete provides a monolithic system preventing water from permeating through the expansion joint opening.
<ul style="list-style-type: none"> • Energy absorbing 	WaboCrete® Parking Series has been developed to absorb impact loads and flexure associated with typical parking deck applications.
<ul style="list-style-type: none"> • Seismic Capabilities 	Capable of 83% (min.) rapid outward movement beyond profile's relaxed width.
<ul style="list-style-type: none"> • Proven performance 	Accommodates unforeseen outward structural movements.
<ul style="list-style-type: none"> • Optional "Stay-in-Place" form 	Accommodates irregular vertical surfaces, reduces labor, aesthetic value.



RECOMMENDED FOR:

- Sealing expansion joint openings on parking structures, service ramps, stair towers & stadiums.
- New construction or repair and maintenance of existing expansion joints.
- Other structures exposed to passenger vehicles where impact and repetitive wheel loads exist.

DESCRIPTION:

Generation II is a durable watertight expansion control system that can accommodate unforeseen outward structural movements (ie: seismic, shrinkage, creep or other unknown movements) beyond its relaxed width without sacrificing performance and water tightness. System shall consist of heavy-duty preformed thermoplastic rubber profiles incorporating integral serrated side flanges and heavy-duty integral solid rubber bulkheads that extend on to edge of slab for transfer of wheel loads. Cast elastomeric profile into a preformed concrete blockout by utilizing manufacturer's ambient cure gray elastomeric concrete header. Installed by Factory Trained Applicators, the WaboCrete® Membrane Gen II systems are available with the strongest warranties in the industry.

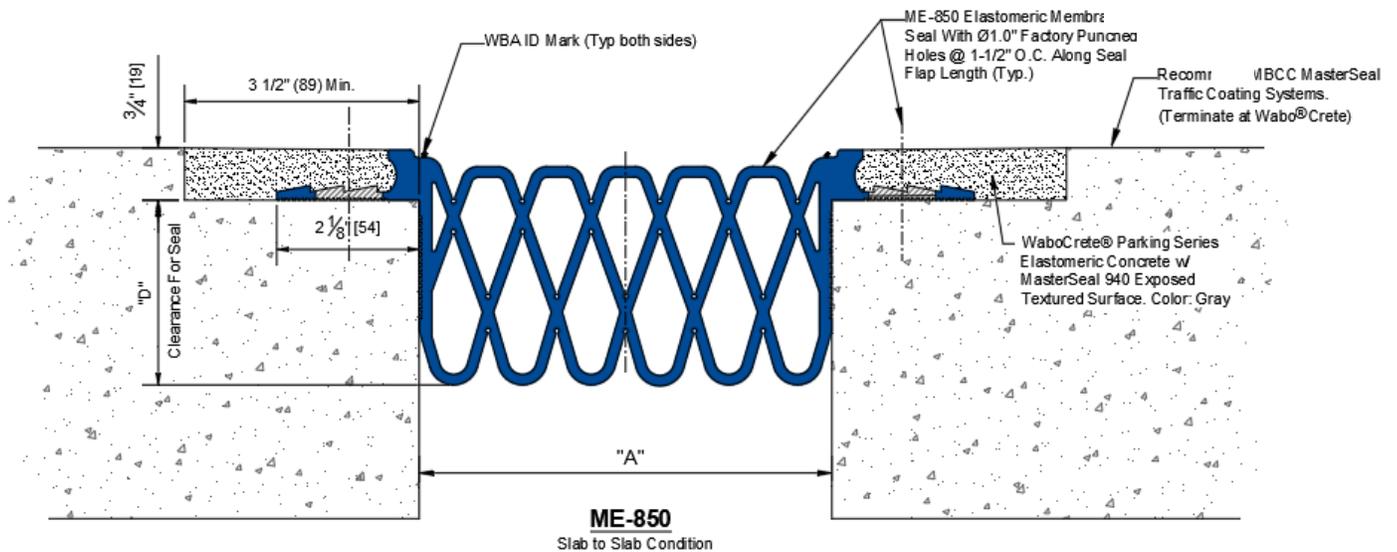
PACKAGING/COVERAGE:

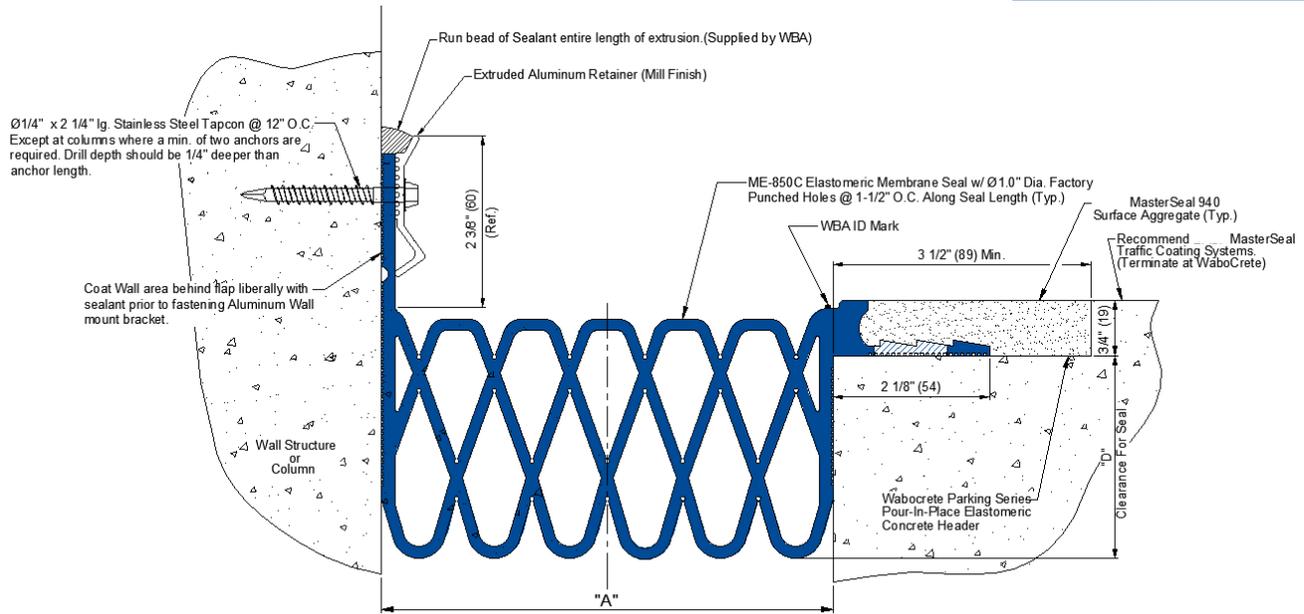
- Thermoplastic rubber seals are cut to length and shipped on pallets per limitations of shipping methods
- WaboCrete® Parking Series
 - PTA – ½ gal container
 - PTB – 1 gal container
 - PTC – 60 lbs aggregate
 - A+B+C = 1 unit
 - 1 unit = 0.6 ft³ (1030 in³)
- MBCC MasterSeal 940 (broadcast aggregate)
 - 50 lb (23 kg) Bag
 - Broadcast to refusal

TECHNICAL DATA:

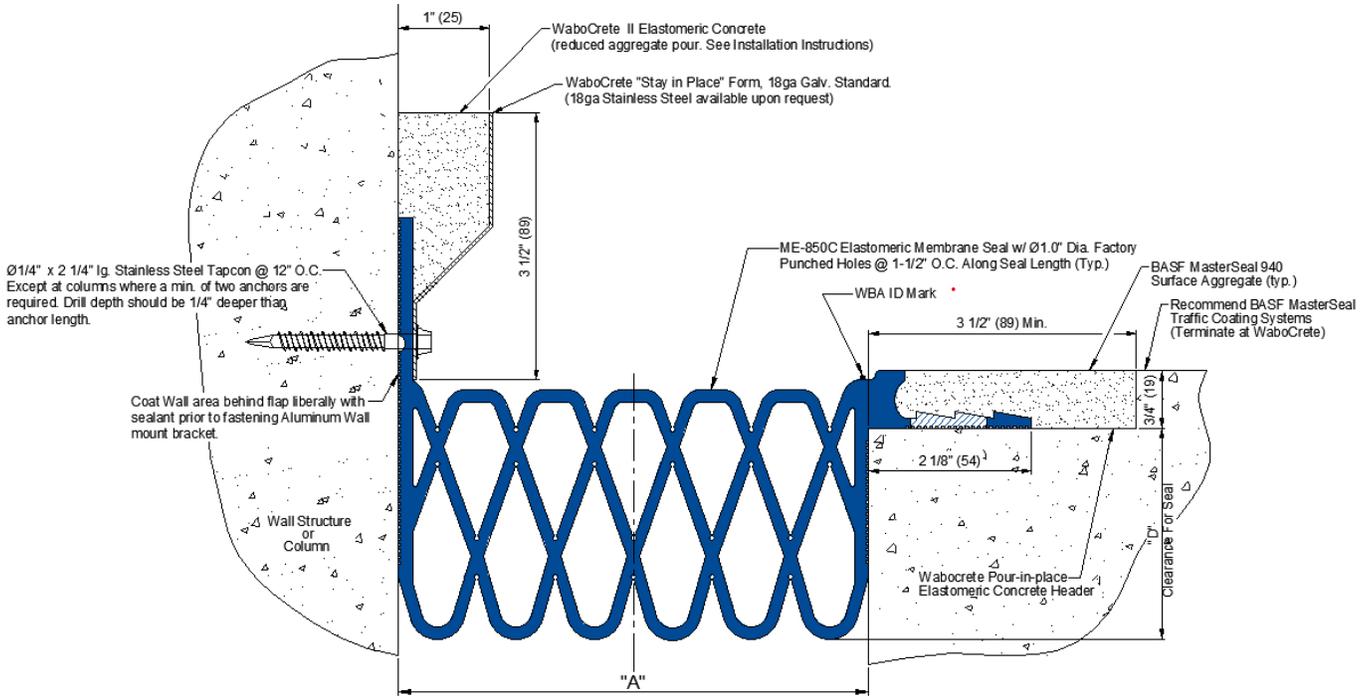
Design Information

The WaboCrete® Gen-II elastomeric membrane sealing expansion joint system is available in 2 different configurations, deck-to-deck and deck-to-wall. For deck-to-wall applications an optional labor savings stay-in-place form is available where the Elastomeric Concrete Header can be poured against vertical surfaces that are irregular or where aesthetics is an owner priority. The ME Gen-II series uses a multi-celled pedestrian-friendly profile designed with ADA guidelines in mind. Movement capabilities are enhanced to meet seismic applications. Should the joint opening (Dimension “A”) expand beyond 6.0” in any area subject to pedestrian foot and vehicular traffic, WBA recommends use of the Wabo®SafetyFlex elastomeric hinged cover system. Consult WBA for additional recommendations.





ME-850C (shown)
Standard 'Slab to Wall' Condition



ME-850C (shown)
Slab to Wall Condition
(Optional Wall Mount Attachment)



Movement Table

Model Number	Installation Width : "A"				Joint Opening (Thermal) : 'A' *							
	Min		Max		Min.		Mid.		Max.		Total Movement.	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
ME-250	1	25	1 3/4	44	3/4	19	1 1/4	32	2 1/2	64	1 3/4	44
ME-250C*	1	25	1 3/4	44	3/4	19	1 1/4	32	2 1/2	64	1 3/4	44
ME-300	1	25	2 1/4	57	3/4	19	2	51	3	76	2 1/4	57
ME-300C*	1	25	2 1/4	57	3/4	19	2	51	3	76	2 1/4	57
ME-450	1 1/2	38	3	76	1 1/2	38	3	76	4 1/2	114	3	76
ME-450C*	1 1/2	38	3	76	1 1/2	38	3	76	4 1/2	114	3	76
ME-600	2	51	4	102	1 1/2	38	3 1/2	89	6	152	4 1/2	114
ME-600C*	2	51	4	102	1 1/2	38	3 1/2	89	6	152	4 1/2	114
ME-700	2 1/2	64	5	127	2	51	4 1/2	114	7	178	5	127
ME-700C*	2 1/2	64	5	127	2	51	4 1/2	114	7	178	5	127
ME-850	3	76	6	152	2 1/2	64	5 1/2	140	8 1/2	216	6	152
ME-850C*	3	76	6	152	2 1/2	64	5 1/2	140	8 1/2	216	6	152

1.) The model Numbers with a "C*" imply corner conditions. WBA offers three standard transition solutions, custom solutions are also available. Contact your WBA Representative with your special design needs.

2.) * : Values reflect allowable Min.& Max. openings after thermal movement occurs.

3.) Note : Refer to specific system cut sheets for additional information on allowable shear & extended movement capabilities.

Elastomeric Concrete Header

PHYSICAL PROPERTIES (Binder and Aggregate)

PHYSICAL PROPERTIES	ASTM METHOD	REQUIREMENTS	TEST RESULTS
Compressive Strength	D695 Mod	2200	2723 psi
Resilience at 5% deflection	D695	90 (min.)	96.7%
Adhesion to concrete:	C190		
Dry Bond		400	451.3 psi
Wet Bond		250	353.9 psi
Impact Resistance	Steel ball drop (.375" th. Disc / dry steel plate)		
At -20 deg F (-29C)		no cracks at 5 ft	7.0 ft-lbs
At 32 deg F (0C)		no cracks at 5 ft	10.0 ft-lbs
At 158 deg F (70C)		no cracks at 5 ft	10.0 ft-lbs



Elastomeric Gland (Thermoplastic)

PHYSICAL PROPERTY	ASTM TEST METHOD	REQUIREMENTS
Tensile Strength, min	D-412	986 psi
Elongation at Break, min	D-412	570%
Hardness, Shore A	D-2240	63
100% Modulus, min	D-412	363 psi
Tear Strength, avg	D-624	29.0 kN/m
Tension Set, avg	D-412	10%
Compression Set, max 22 hrs @ 73°F 70 hrs @ 257°F	D-395	17% 40%
Ozone Resistance	D-1171	No cracks
UV Resistance	SAE J1960	Pass
Staining Resistance	D-925	No staining



APPLICATION:

INSTALLATION SUMMARY:

- Concrete substrates must be abrasive blasted to remove all latencies and contaminants which may cause bonding problems.
- Apply Wabo® Bonding Agent (primer) to surface of the properly prepared concrete prior to installation of WaboCrete® Parking Series. Do NOT apply Wabo® Bonding Agent to steel substrates. There must be no visible moisture prior to the application of the primer. Primer can be brush applied. Do NOT allow primer to dry prior to placement of WaboCrete® Parking Series.
- Thoroughly pre-mix (approximately 20 seconds) Part B separately before pouring entire contents of Part B into clean 5 gallon container. Add Part A and mix both components for approximately 30 seconds, or until well blended.
- Slowly add the aggregate component (Part C) to the mixed liquids and mix until all aggregate is coated (approximately 1 minute). This mix can be poured into the properly prepared blockout, in which the primer is still wet. The material will flow and self-level. Use a margin trowel to work material and finish surface.
- Broadcast MBCC Masterseal 940 onto WaboCrete® Parking Series when the gray elastomeric header becomes tacky. Broadcast to refusal.
- For sloped conditions, add Wabo® Non Flow Additive to the liquid-aggregate mixture.
- For optional stay-in-place form header installation Part C aggregate may be reduced by 5lbs, (10lbs max.) for increased flowability and consolidation against irregular surfaces. (Note: yield per unit will be reduced)
- The elastomeric gland shall be field installed in longest possible continuous lengths. Install the expansion control system in accordance with manufacturer's typical details and installation procedures.

FOR BEST RESULTS:

- Install when concrete substrate is clean, sound, dry, and cured (14-day minimum).
- Do not install if the joint's anticipated movement will exceed the system's movement range.
- Protect the work area with appropriate slab protection (roofing paper).
- Minimize splice points by installing seals in longest possible continuous lengths.
- Do not allow any of the components to freeze prior to installation. Store all components out of direct sunlight in a clean, dry location between 50°F (10°C) and 90°F (32°C).
- Shelf life of chemical components is approximately 1 year. Shelf life of WaboCrete® Parking Series is 18 months.
- Periodically inspect the applied material and repair localized areas as needed. Consult a Watson Bowman Acme representative for additional information.
- Make certain the most current version of the product data sheet is being used. Please consult the website (www.watsonbowmanacme.com) or contact a customer service representative.
- Proper application is the responsibility of the user. Field visits by Watson Bowman Acme personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.
- Since methods of application and on-site conditions are beyond our control and can affect performance, appearance or color, Watson Bowman Acme makes no other warranty, expressed or implied.

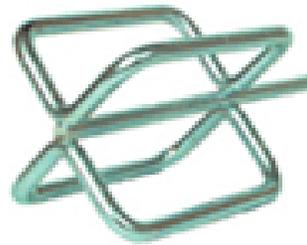
OPTIONS/EQUIPMENT:

- Non-flow additive (sloped conditions)
- Two-inch (2") hand margin trowels
- Use a ¾" heavy duty, slow speed, high torque, drill with an egg-beater (or mud beater) style mixing paddle to mix Wabo®Crete Parking Series.
- One clean 5-gallon bucket

RELATED DOCUMENTS:

- Material Safety Data Sheets
- WaboCrete® Membrane Gen II Specification
- WaboCrete® Membrane Gen II Sales Drawings
- WaboCrete® Membrane Gen II Installation Procedure

Example of an "egg-beater" style mixing paddle.



LIMITED WARRANTY:

Watson Bowman Acme warrants that this product conforms to its current applicable specifications. WATSON BOWMAN ACME MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. The sole and exclusive remedy of Purchaser for any claim concerning this product, including, but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is the replacement of product or refund of the purchase price, at the sole option of Watson Bowman Acme. Any claims concerning this product shall be submitted in writing within one year of the delivery date of this product to Purchaser and any claims not presented within that period are waived by Purchaser. IN NO EVENT SHALL WATSON BOWMAN ACME BE LIABLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDES LOSS OF PROFITS) OR PUNITIVE DAMAGES. Other warranties may be available when the product is installed by a factory trained installer. Contact your local Watson Bowman Acme representative for details. The data expressed herein is true and accurate to the best of our knowledge at the time published; it is, however, subject to change without notice.

WaboCrete® Membrane_Gen-II 1023

FEATURES & BENEFITS

GRANUSIL® Mineral Filler is produced from high-purity industrial quartz sand for a wide variety of industrial and contractor mixed applications which need a reliable silica contribution or require a chemically inert structural filler. Consistently uniform grain shapes and particle size distributions offer excellent placement, compaction and mechanical properties. High silica content combined with low level soluble ions, alkalis and alkaline oxides provide non-reactive service in most corrosive and exposed environments.

These durable monocrystalline structures resist abrasion in high traffic-excessive wear applications and provide the stability formulators seek in high solids emulsions, elastomerics, cemented and modified cementitious systems. GRANUSIL is the preferred structural component in systems ranging from polymerized floor overlays to artificial sports turf.

All GRANUSIL grades are processed and sized under rigid Covia QIPSM statistical and quality assurance programs. The result is chemical purity and consistently uniform particle size distributions for predictable performance in either manufactured or site-prepared products.

PARTICAL SIZE ANALYSIS

Typical Mean Values. These Do Not Represent a Specification.

	GRANUSIL® Grades											
	ASTM	MICRONS	2095	2040	2010	4095	4075	4060	4045	4020	5020	5010
Typical mean % retained on individual sieves	12	1.70mm	0.8	—	—	—	—	—	—	—	—	—
	16	1.18mm	33.0	0.8	—	0.2	—	—	—	—	—	—
	20	850	54.2	60.0	18.5	3.0	1.1	0.9	—	—	—	—
	30	600	10.5	27.5	14.3	36.9	27.8	20.8	0.1	—	—	—
	40	425	0.5	10.2	38.2	55.6	56.9	33.2	53.3	15.6	1.3	0.5
	50	300	0.2	0.9	27.3	3.8	13.4	26.0	44.5	41.2	27.9	11.3
	70	212	—	—	1.1	—	—	17.3	1.5	27.5	38.5	30.8
	100	150	—	—	0.4	—	—	1.6	0.4	10.2	21.5	35.0
	140	106	—	—	0.2	—	—	0.2	0.2	4.5	8.9	18.0
	200	75	—	—	0.1	—	—	—	0.1	1.0	1.8	4.1
	270	53	—	—	—	—	—	—	—	0.1	0.1	0.4
	PAN	PAN	0.8	0.6	—	0.5	0.8	—	—	—	—	—

PHYSICAL PROPERTIES

Typical Mean Values. These Do Not Represent a Specification.

GRANUSIL® Mineral Filler		
Grain Shape	Subround	Visual
Hardness (Mohs)	7.0	Moh's Scale
Moisture Content (%)	<0.1	ASTM C-566
Specific Gravity (g/cm ³)	2.65	ASTM C-128
Bulk Density, loose (lb/ft ³)	92-95	ASTM C-29
Bulk Density, compacted (lb/ft ³)	98-100	ASTM C-29

CHEMICAL ANALYSIS

Typical Mean Values. These Do Not Represent a Specification.

	Typical Mean Percent by Weight	
	2095-2010	4095-5010
Silicon Dioxide (SiO ₂)	99.76	99.69
Iron Oxide (Fe ₂ O ₃)	0.04	0.04
Aluminum Oxide (Al ₂ O ₃)	0.05	0.07
Calcium Oxide (CaO)	0.02	0.02
Titanium Dioxide (TiO ₂)	<0.01	<0.01
Magnesium Oxide (MgO)	0.01	0.01
Potassium Oxide (K ₂ O)	0.01	0.02
Sodium Oxide (Na ₂ O)	<0.01	<0.01
Loss on Ignition (LOI)	0.10	0.13

SHIPPING/ORDERING INFORMATION

- Shipping Point: Ottawa, MN
- Originating Carrier: Union Pacific (U.P.)
- Availability: Bulk, IBC and 50 lb Poly Bag
Truck and Rail

CUSTOMER SERVICE

US & Canada: 1-800-243-9004

Fax: 1-800-243-9005

Worldwide: 1-203-442-2500

Fax: 1-203-972-1378

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GRADE NUMBERS INDICATE RELATIVE VALUES OR RESULTS. THEY ARE NOT A SPECIFICATION OR WARRANTY OF PERFORMANCE.

HEALTH HAZARD WARNING: Prolonged inhalation of dust associated with the materials described in this data sheet can cause delayed lung injury including Silicosis, a progressive, disabling and sometimes fatal lung disease. IARC and NTP have determined that crystalline silica can cause lung cancer in humans. Risk of injury is dependent on the duration and level of exposure. Follow OSHA or other relevant safety and health standards for the form of crystalline silica called Quartz. Current safety data sheet, containing safety information, is available and should be consulted before usage.

Notice: While information contained herein is correct to the best of our knowledge, Covia hereby disclaims any warranties as to the accuracy of the same. Recommendations or suggestions are made without guarantee or representation as to result, since conditions of usage are beyond our control. All materials are sold subject to Covia's standard terms and conditions of sale and the condition that buyer shall make his own tests to determine the suitability of such product for buyer's purpose. No statement contained herein shall be construed as a recommendation to infringe any patent.

Silica/Silica Containing

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**PRODUCT
SAFETY DATA
SHEETS**

SAFETY DATA SHEET

1. Identification

Material name: DYMONIC 100 GRAY - 30 CTG CS
Material: 965712C323

Recommended use and restriction on use

Recommended use: Sealant
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco Canadian Sealants
220 Wicksteed Ave
Toronto ON M4H 1G7
CA

Contact person: EH&S Department
Telephone: 1-800-263-6046
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Inhalation - vapor)	Category 4
Acute toxicity (Inhalation - dust and mist)	Category 4
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Carcinogenicity	Category 1A
Toxic to reproduction	Category 1B

Unknown toxicity - Health

Acute toxicity, oral	28.9 %
Acute toxicity, dermal	30.39 %
Acute toxicity, inhalation, vapor	96.54 %
Acute toxicity, inhalation, dust or mist	66.64 %

Environmental Hazards

Acute hazards to the aquatic environment	Category 3
Chronic hazards to the aquatic environment	Category 3

Unknown toxicity - Environment

Acute hazards to the aquatic environment	91.2 %
Chronic hazards to the aquatic environment	91.2 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
May damage fertility. May damage the unborn child.
Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. [In case of inadequate ventilation] wear respiratory protection.

Response: IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label). IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Calcium carbonate	471-34-1	20 - <50%
Polyvinyl chloride	9002-86-2	5 - <10%
Calcium Carbonate (Limestone)	1317-65-3	5 - <10%
Xylene	1330-20-7	1 - <5%
Trade Secret	Trade Secret	1 - <5%
Titanium dioxide	13463-67-7	1 - <2.5%
Diisodecyl phthalate	26761-40-0	0.3 - <1%
Ethylbenzene	100-41-4	0.1 - <1%
Isophorone Diisocyanate	4098-71-9	0.5 - <1%
Hydrotreated heavy naphthenic distillate	64742-52-5	0.1 - <1%
Stearic acid	57-11-4	0.1 - <1%
Dibutyl tin dilaurate	77-58-7	0.1 - <0.3%
Iodopropynyl butylcarbamate	55406-53-6	0.01 - <0.1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

- Inhalation:** Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.
- Skin Contact:** Get medical attention if symptoms occur. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
- Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.
- Ingestion:** Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- Personal Protection for First-aid Responders:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Most important symptoms/effects, acute and delayed

- Symptoms:** Extreme irritation of eyes and mucous membranes, including burning and tearing.
- Hazards:** No data available.

Indication of immediate medical attention and special treatment needed

- Treatment:** Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep upwind. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Accidental release measures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Methods and material for containment and cleaning up: Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Mechanical ventilation or local exhaust ventilation may be required. Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of dust.

Safe handling advice: Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Use mechanical ventilation in case of handling which causes formation of dust. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not get in eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing.

Contact avoidance measures: No data available.

Hygiene measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

Storage

Safe storage conditions: Store locked up.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Calcium carbonate - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Calcium carbonate - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Calcium carbonate - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (01 2017)
Calcium carbonate - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (09 2016)
Calcium carbonate - Inhalable particles.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended (01 2021)
Calcium carbonate - Respirable particles.	TWA	3 mg/m3	US. ACGIH Threshold Limit Values, as amended (01 2021)
Calcium carbonate - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (09 2016)
Calcium carbonate - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (09 2016)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (09 2016)
Calcium carbonate - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (01 2017)
Polyvinyl chloride - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values, as amended (2011)
Polyvinyl chloride - as vinyl chloride monomer	TWA	1 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended (02 2006)

	STEL	5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended (02 2006)
	OSHA_ACT	0.5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended (02 2006)
Polyvinyl chloride - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Polyvinyl chloride - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (2000)
Polyvinyl chloride - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (2000)
Polyvinyl chloride - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (2000)
Polyvinyl chloride - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (2000)
Calcium Carbonate (Limestone) - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Calcium Carbonate (Limestone) - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Xylene	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	TWA	20 ppm	US. ACGIH Threshold Limit Values, as amended (01 2022)
Titanium dioxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Titanium dioxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Titanium dioxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Titanium dioxide - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Titanium dioxide - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Titanium dioxide - Respirable finescale particles	TWA	2.5 mg/m3	US. ACGIH Threshold Limit Values, as amended (01 2022)
Titanium dioxide - Respirable nanoscale particles	TWA	0.2 mg/m3	US. ACGIH Threshold Limit Values, as amended (01 2022)
Ethylbenzene	TWA	20 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Isophorone Diisocyanate	TWA	0.005 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
Hydrotreated heavy naphthenic distillate	PEL	500 ppm 2,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Hydrotreated heavy naphthenic distillate - Mist.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Hydrotreated heavy naphthenic distillate -	TWA	5 mg/m3	US. ACGIH Threshold Limit Values, as amended (03 2014)

Inhalable fraction.			
Stearic acid - Respirable fraction.	TWA	3 mg/m3	US. ACGIH Threshold Limit Values, as amended (03 2017)
Stearic acid - Inhalable fraction.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended (03 2017)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	US. ACGIH Threshold Limit Values, as amended (2011)
	TWA	0.1 mg/m3	US. ACGIH Threshold Limit Values, as amended (2011)
	PEL	0.1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)

Chemical name	Type	Exposure Limit Values	Source
Calcium carbonate - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Calcium carbonate - Respirable particles.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Calcium carbonate - Inhalable particles.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Calcium carbonate - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Polyvinyl chloride - Respirable.	TWA	1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Polyvinyl chloride - Respirable fraction.	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Polyvinyl chloride - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Calcium Carbonate (Limestone) - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board);

			as amended (07 2007)
Calcium Carbonate (Limestone) - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium Carbonate (Limestone) - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Xylene	STEL	150 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	100 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Xylene	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Calcium oxide	TWA	2 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium oxide	TWA	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (12 2007)
Calcium oxide	TWA	2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (09 2011)
Ethylbenzene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Ethylbenzene	TWA	20 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs: Table of

			Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Isophorone Diisocyanate	TWA	0.005 ppm 0.045 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Hydrotreated heavy naphthenic distillate - Mist.	TWA	1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (05 2013)
Hydrotreated heavy naphthenic distillate - Inhalable fraction.	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Hydrotreated heavy naphthenic distillate - Inhalable dusts and mists.	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2022)

Chemical name	Type	Exposure Limit Values	Source
Calcium carbonate - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium carbonate - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)

Calcium carbonate - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Calcium carbonate - Respirable particles.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Calcium carbonate - Inhalable particles.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Calcium carbonate - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Polyvinyl chloride - Respirable.	TWA	1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Polyvinyl chloride - Respirable fraction.	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Polyvinyl chloride - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Calcium Carbonate (Limestone) - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium Carbonate (Limestone) - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium Carbonate (Limestone) - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Xylene	STEL	150 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	100 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Xylene	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Calcium oxide	TWA	2 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium oxide	TWA	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (12 2007)
Calcium oxide	TWA	2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Diisodecyl phthalate	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (09 2011)
Ethylbenzene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Ethylbenzene	TWA	20 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)

Isophorone Diisocyanate	TWA	0.005 ppm 0.045 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Hydrotreated heavy naphthenic distillate - Mist.	TWA	1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (05 2013)
Hydrotreated heavy naphthenic distillate - Inhalable fraction.	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Hydrotreated heavy naphthenic distillate - Inhalable dusts and mists.	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2022)
Stearic acid - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Stearic acid - Respirable.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (01 2021)
Stearic acid	TWA	10 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	0.1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Dibutyl tin dilaurate - as Sn	TWA	0.1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Aluminum oxide - Respirable fraction.	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Aluminum oxide - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Aluminum oxide - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Aluminum oxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Aluminum oxide - Inhalable particles.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Aluminum oxide - Respirable particles.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Aluminum oxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Aluminum oxide - Respirable.	TWA	1.0 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2022)
Aluminum oxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2022)
Aluminum oxide - Respirable dust.	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2022)
Toluene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Toluene	TWA	20 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Toluene	TWA	50 ppm 188 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Stannous octoate - as Sn	TWA	0.1 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2018)
	STEL	0.2 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2018)
Stannous octoate - as Sn	TWA	0.1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (08 2017)
Stannous octoate - as Sn	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	0.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Carbon Black - Inhalable	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (09 2011)
Carbon Black - Inhalable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Carbon Black - Inhalable dust.	TWA	3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Amorphous silica - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Amorphous silica - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Amorphous silica - Respirable particles.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Amorphous silica - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Amorphous silica - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Amorphous silica - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Amorphous silica - Inhalable particles.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Zirconium dioxide - as Zr	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	STEL	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Zirconium dioxide - as Zr	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Zirconium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Zirconium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2019)
Zirconium dioxide - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Zirconium dioxide - Inhalable particles.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Zirconium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Zirconium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2020)
Zirconium dioxide - Respirable particles.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
Zirconium dioxide - as Zr	TWA	5 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2022)
	STEL	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (06 2022)
Magnesium oxide - Respirable dust and/or fume. - as Mg	STEL	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Magnesium oxide - Inhalable fume.	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Magnesium oxide - Respirable dust and/or fume. - as Mg	TWA	3 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Magnesium oxide - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Magnesium oxide - Inhalable dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	TWA	0.05 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (04 2022)

Calcium sulfate	TWA	10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended (07 2009)
Calcium sulfate - Inhalable	TWA	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Calcium sulfate - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Calcium sulfate - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Iron oxide - Dust. - as Fe	TWA	5 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Iron oxide - Fume. - as Fe	STEL	10 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	5 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)

Iron oxide - Dust and fume. - as Fe	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Iron oxide - Respirable fraction.	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
2-Ethylhexanoic acid - Vapor and aerosol, inhalable.	TWA	5 mg/m3	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
2-Ethylhexanoic acid - Inhalable fraction and vapor.	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Methanol	TWA	200 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Methanol	TWA	200 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	STEL	250 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	STEL	250 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Methanol	STEL	250 ppm 328 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	TWA	200 ppm 262 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Phenol	TWA	5 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Phenol	TWA	5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Phenol	TWA	5 ppm 19 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Cumene	STEL	75 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	25 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)

Cumene	TWA	50 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Cumene	TWA	50 ppm 246 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Benzene	STEL	2.5 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
	TWA	0.5 ppm	Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)
Benzene	TWA	0.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	STEL	2.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Benzene	TWA	1 ppm 3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	5 ppm 15.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEI (03 2013)
Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEI (02 2014)

Appropriate Engineering Controls

Mechanical ventilation or local exhaust ventilation may be required. Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of dust.

Individual protection measures, such as personal protective equipment

Eye/face protection:

Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection

Hand Protection:

Additional Information: Use suitable protective gloves if risk of skin contact.

Skin and Body Protection:

Wear suitable protective clothing. Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state:	solid
Form:	Paste
Color:	Gray
Odor:	Mild, Mild , Mild
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	Slower than n-Butyl Acetate Slower than n-Butyl Acetate Slower than n-Butyl Acetate
Flammability (solid, gas):	No No No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.3297
Solubility(ies)	
Solubility in water:	Insoluble in water Insoluble in water Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.

Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture. Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture. Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	May be harmful in contact with skin. May cause an allergic skin reaction.
Eye contact:	Causes serious eye damage.
Ingestion:	May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	ATEmix: 4,495.23 mg/kg
Dermal	

Product: ATEmix: 4,222.68 mg/kg

Inhalation Product: ATEmix: 15.93 mg/l
ATEmix : 1.21 mg/l

Repeated dose toxicity Product: No data available.

Skin Corrosion/Irritation Product: No data available.

Specified substance(s):

Calcium carbonate	in vivo (Rabbit): Not irritant , 24 - 72 h
Xylene	in vivo (Rat): Slightly irritating , 24 h
Trade Secret	In vitro (In vitro): Not irritant , 0.25 - 42.25 h
Titanium dioxide	in vivo (Rabbit): Not irritant , 24 h
Hydrotreated heavy naphthenic distillate	in vivo (Rabbit): Category 2 , 24 - 72 h
Stearic acid	in vivo (Rabbit): Not irritant , 24 h
Dibutyl tin dilaurate	In vitro (Human, in vitro reconstituted epidermis model): Not irritant , 15 min

Serious Eye Damage/Eye Irritation Product: No data available.

Specified substance(s):

Calcium carbonate	Rabbit, 24 - 72 h: Not irritant
Xylene	Rabbit, 72 h: Moderately irritating Rabbit, 1 h: Not irritant
Trade Secret	Rabbit, 24 - 72 h: Category II
Titanium dioxide	Rabbit, 24 - 72 h: Not irritant
Hydrotreated heavy naphthenic distillate	Rabbit, 24 h: Not irritant
Stearic acid	Rabbit, 27 - 72 h: Not irritant
Dibutyl tin dilaurate	Rabbit, 24 h: Highly irritating

Respiratory or Skin Sensitization

Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide Overall evaluation: Possibly carcinogenic to humans.

Ethylbenzene Overall evaluation: Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

Polyvinyl chloride
Cancer

Germ Cell Mutagenicity

In vitro Product: No data available.

In vivo Product: No data available.

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects:

Constituents of this product may include crystalline silica which, if in inhalable form, may cause silicosis, a form of progressive pulmonary fibrosis. Inhalable crystalline silica is listed by IARC as a group I carcinogen (lung) based on sufficient evidence in occupationally exposed humans and sufficient evidence in animals. Crystalline silica is also listed by the NTP as a known human carcinogen. Constituents may also contain asbestiform or non-asbestiform tremolite or other silicates as impurities, and above de minimis exposure to these impurities in inhalable form may be carcinogenic or cause other serious lung problems.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Specified substance(s):	
Xylene	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 13.41 mg/l Mortality
Trade Secret	LC 50 (Oryzias latipes, 96 h): 101 mg/l Experimental result, Key study
Titanium dioxide	LC 50 (Pimephales promelas, 96 h): 8.2 mg/l Read-across from supporting substance (structural analogue or surrogate), Supporting study
Diisodecyl phthalate	LC 50 (Fathead minnow (Pimephales promelas), 96 h): > 0.47 mg/l Mortality
Ethylbenzene	LC 50 (Oncorhynchus mykiss, 96 h): 4.2 mg/l Experimental result, Key study
Isophorone Diisocyanate	LC 0 (Leuciscus idus, 48 h): 1 mg/l Experimental result, Not specified LC 0 (Danio rerio, 96 h): >= 72 mg/l Experimental result, Key study LC 0 (Cyprinus carpio, 96 h): >= 208 mg/l Experimental result, Key study LC 50 (Danio rerio, 96 h): > 72 mg/l Experimental result, Key study LC 50 (Leuciscus idus, 48 h): 1.8 mg/l Experimental result, Not specified
Hydrotreated heavy naphthenic distillate	LL 50 (Pimephales promelas, 96 h): > 100 mg/l Experimental result, Key study
Iodopropynyl butylcarbamate	LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 96 h): 0.05 - 0.089 mg/l Mortality

Aquatic Invertebrates

Product:	No data available.
Specified substance(s):	
Trade Secret	EC 50 (Daphnia magna, 48 h): > 87.1 mg/l experimental result Experimental result, Key study
Titanium dioxide	LC 50 (Daphnia magna, 48 h): > 100 mg/l experimental result Experimental result, Weight of Evidence study

Diisodecyl phthalate	EC 50 (Opossum shrimp (Americamysis bahia), 96 h): > 0.08 mg/l Mortality
Ethylbenzene	EC 50 (Daphnia magna, 48 h): 1.8 - 2.4 mg/l experimental result Experimental result, Key study
Isophorone Diisocyanate	EC 50 (Daphnia magna, 48 h): 27 mg/l experimental result Experimental result, Key study
Hydrotreated heavy naphthenic distillate	EC 50 (Daphnia magna, 48 h): > 10,000 mg/l experimental result Experimental result, Key study
Dibutyl tin dilaurate	EC 50 (Water flea (Daphnia magna), 24 h): 0.66 mg/l Intoxication EC 50 (Daphnia magna, 48 h): 1.7 - 3.4 mg/l experimental result Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Hydrotreated heavy naphthenic distillate
NOAEL (Oncorhynchus mykiss): >= 1,000 mg/l QSAR QSAR, Supporting study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Titanium dioxide
NOAEL (Daphnia magna): 100 mg/l experimental result
Experimental result, Supporting study

Ethylbenzene
NOAEL (Ceriodaphnia dubia): 1 mg/l secondary data
Other, Key study

Isophorone Diisocyanate
NOAEL (Daphnia magna): 3 mg/l read-across from supporting substance (structural analogue or surrogate)
Read-across from supporting substance (structural analogue or surrogate), Key study

Hydrotreated heavy naphthenic distillate
NOAEL (Daphnia magna): 10 mg/l experimental result
Experimental result, Key study

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

Trade Secret
33 % (28 d) Detected in water. Experimental result, Key study

Ethylbenzene
70 - 80 % (28 d) Detected in water. Experimental result, Key study

Isophorone Diisocyanate 62 % (28 d) Detected in water. Experimental result, Not specified
> 0 % (28 d) Detected in water. Experimental result, Key study

Dibutyl tin dilaurate 23 % (39 d) Detected in water. Experimental result, Key study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential**Bioconcentration Factor (BCF)**

Product: No data available.

Specified substance(s):

Xylene

Oncorhynchus mykiss, Bioconcentration Factor (BCF): > 8.1 - < 25.9 Aquatic sediment Experimental result, Key study

Ethylbenzene

Oncorhynchus kisutch, Bioconcentration Factor (BCF): 1 Aquatic sediment Other, Key study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Xylene

Log Kow: 2.77 - 3.15 No Not specified, Not specified

Diisodecyl phthalate

Log Kow: 10.36

Ethylbenzene

Log Kow: 3.15

Log Kow: 3.13 - 3.14 No Other, Supporting study

Isophorone Diisocyanate

Log Kow: 4.75

Stearic acid

Log Kow: 8.23

Dibutyl tin dilaurate

Log Kow: 3.12

Mobility in soil:

No data available.

Other adverse effects:

Harmful to aquatic life with long lasting effects.

13. Disposal considerations**Disposal methods:**

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging:

No data available.

14. Transport information**TDG:**

000000022950

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

Further Information:

The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Polyvinyl chloride	Blood Liver Cancer Flammability Central nervous system

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
Ethylbenzene	1000 lbs.
Toluene	1000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Immediate (Acute) Health Hazards
- Delayed (Chronic) Health Hazard
- Acute toxicity (any route or exposure)
- Respiratory or Skin Sensitization
- Carcinogenicity
- Reproductive toxicity

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

Not regulated.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

<u>Chemical Identity</u>	<u>% by weight</u>
Xylene	1.0%
Ethylbenzene	0.1%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	Reportable quantity: 100 lbs.

US State Regulations

US. California Proposition 65



WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

VOC:

Regulatory VOC (less water and exempt solvent) : 45 g/l

VOC Method 310 : 3.37 %

Inventory Status:

Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EC Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Mexico INSQ:	One or more components in this product are not listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this

product are not listed on or exempt from the Inventory.

Taiwan Chemical Substance Inventory: One or more components in this product are not listed on or exempt from the Inventory.

Australia Industrial Chem. Act (AIC): One or more components in this product are not listed on or exempt from the Inventory.

Switzerland New Subs Notified/Registered: One or more components in this product are not listed on or exempt from the Inventory.

Thailand DIW Existing Chemical Inv. List: One or more components in this product are not listed on or exempt from the Inventory.

Vietnam National Chemical Inventory: One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision
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Revision Date: 05/11/2023

Version #: 1.1

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

Safety Data Sheet



1. Identification

Product Name: ROHPER 1-GL 2PK TRAFFIC WHITE **Revision Date:** 7/21/2023

Product Identifier: 2391402 **Supersedes Date:** 12/13/2022

Recommended Use: Traffic Striping Paint/Waterbased Acrylic

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Rust-Oleum Canada (ROCA)
200 Confederation Parkway
Concord, ON L4K 4T8
Canada
Emergency Phone: 800-387-3625

Preparer: Regulatory Department

Emergency Telephone: 24 Hour Hotline: 847-367-7700

2. Hazards Identification

Classification

Symbol(s) of Product

No symbol is required per 2012 OSHA Hazard Communication Standard 29 CFR 1910.1200.

Signal Word

No Signal Word has been assigned.

Possible Hazards

8% of the mixture consists of ingredient(s) of unknown acute toxicity.

3. Composition / Information on Ingredients

HAZARDOUS SUBSTANCES

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.% Range</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Titanium Dioxide	13463-67-7	2.5-10	Not Available	Not Available
2-(2-butoxyethoxy)ethanol	112-34-5	1.0-2.5	GHS07	H319
Crystalline Silica / Quartz	14808-60-7	0.1-1.0	Not Available	Not Available
Hydrotreated Heavy Paraffinic Petroleum Distillates	64742-54-7	0.1-1.0	Not Available	Not Available

4. First-Aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed. Remove contact lenses, if present and easy to do. Continue rinsing.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention. If swallowed, do not induce vomiting. If victim is conscious and alert, give 2 to 4 cupfuls of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Treat symptomatically and supportively. If swallowed, rinse mouth with water. If feeling unwell, get medical attention.

5. Fire-Fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep containers tightly closed. FLASH POINT IS TESTED TO BE GREATER THAN 200 DEGREES F. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent buildup of steam. If water is used, fog nozzles are preferred.

Special Fire and Explosion Hazard (Combustible Dust): No Information

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations. Do not incinerate closed containers

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and laundry before reuse. Use only with adequate ventilation. Follow all SDS and label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use.

Advice on Safe Handling of Combustible Dust: No Information

8. Exposure Controls / Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Titanium Dioxide	13463-67-7	10.0	0.2 mg/m ³	N.E.	15 mg/m ³	N.E.
2-(2-butoxyethoxy)ethanol	112-34-5	5.0	10 ppm	N.E.	N.E.	N.E.
Crystalline Silica / Quartz	14808-60-7	1.0	0.025 mg/m ³	N.E.	50 µg/m ³	N.E.
Hydrotreated Heavy Paraffinic Petroleum Distillates	64742-54-7	1.0	N.E.	N.E.	N.E.	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

Engineering Measures for Combustible Dust: No Information

9. Physical and Chemical Properties

Appearance:	Liquid	Physical State:	Liquid
Odor:	Mild	Odor Threshold:	N.E.
Specific Gravity:	1.560	pH:	8.19
Freeze Point, °C:	N.D.	Viscosity:	N.D.
Solubility in Water:	Miscible	Partition Coefficient, n-octanol/ water:	N.D.
Decomposition Temp., °C:	N.D.	Explosive Limits, vol%:	0.9 - 24.6
Boiling Range, °C:	100 - 537	Flash Point, °C:	94
Flammability:	Does not Support Combustion	Auto-Ignition Temp., °C:	N.D.
Evaporation Rate:	Slower than Ether	Vapor Pressure:	N.D.
Vapor Density:	Heavier than Air		

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

Conditions to Avoid: Avoid excess heat. Keep from freezing.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

11. Toxicological Information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Irritating, and may injure eye tissue if not removed promptly.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Low hazard for usual industrial handling or commercial handling by trained personnel.

EFFECTS OF OVEREXPOSURE - INHALATION: High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. Constituents of this product include crystalline silica dust which, if inhalable, may cause silicosis, a form of progressive pulmonary fibrosis. Inhalable crystalline silica is listed by IARC as a group I carcinogen (lung) based on sufficient evidence in occupationally exposed humans and sufficient evidence in animals. Crystalline silica is also listed by the NTP as a known human carcinogen. Constituents may also contain asbestiform or non-asbestiform tremolite or other silicates as impurities, and above de minimus exposure to these impurities in inhalable form may be carcinogenic or cause other serious lung problems.

EFFECTS OF OVEREXPOSURE - INGESTION: Substance may be harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. No significant exposure to Titanium Dioxide is thought to occur during the use of products in which Titanium Dioxide is bound to other materials, such as in paints during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula. (Ref: IARC Monograph, Vol. 93, 2010)

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
13463-67-7	Titanium Dioxide	>10000 mg/kg Rat	6000	N.E.
112-34-5	2-(2-butoxyethoxy)ethanol	5660 mg/kg Rat	2700 mg/kg Rabbit	N.E.
14808-60-7	Crystalline Silica / Quartz	5500 mg/kg Rat	5500	100 mg/L
64742-54-7	Hydrotreated Heavy Paraffinic Petroleum Distillates	15000 mg/kg Rat	>5000 mg/kg Rabbit	N.E.

N.E. - Not Established

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. No ecotoxicity data was found for this product.

13. Disposal Information

DISPOSAL: Dispose of material in accordance to local, state, and federal regulations and ordinances.

14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	N.A.	N.A.	N.A.
Proper Shipping Name:	Not Regulated	Not Regulated	Not Regulated	Not Regulated
Hazard Class:	N.A.	N.A.	N.A.	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	No	No	No	No

15. Regulatory Information**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

None Known

SARA Section 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
2-(2-butoxyethoxy)ethanol	112-34-5

Toxic Substances Control Act

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12(b) components exist in this product.

U.S. State Regulations:**California Proposition 65**

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

16. Other Information**HMIS RATINGS**

Health: 1* Flammability: 1 Physical Hazard: 0 Personal Protection: X

NFPA RATINGS

Health: 1 Flammability: 1 Instability: 0

Volatile Organic Compounds: 86 g/L

SDS REVISION DATE: 7/21/2023

REASON FOR REVISION: Substance and/or Product Properties Changed in Section(s):
03 - Composition / Information on Ingredients
Substance Hazard Threshold % Changed

Legend: N.A. - Not Applicable, N.D. - Not Determined, N.E. - Not Established

The manufacturer believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. The manufacturer makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

This is a kit that contains the following components:
TREMPrime Multi Surface Urethane Primer- Part A

TREMprime Multi Surface Urethane Primer-Part B

SAFETY DATA SHEET

1. Identification

Product identifier: TREMPreme Multi Surface Urethane Primer- Part A
Product Code: 252102 504

Recommended use and restriction on use

Recommended use: Sealant
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Cleveland OH 44122
US

Contact person:	EH&S Department
Telephone:	216-292-5000
Emergency telephone number:	1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin sensitizer	Category 1
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Unknown toxicity - Health

Acute toxicity, oral	79.62 %
Acute toxicity, dermal	79.62 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	99.3 %

Unknown toxicity - Environment

Acute hazards to the aquatic environment	99.3 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: May cause an allergic skin reaction.

Precautionary Statement

- Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Bisphenol A Polyglycidyl Ether Resin	25068-38-6	5 - 10%
1-Methoxy-2-Propanol	107-98-2	1 - 5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- Ingestion:** Rinse mouth thoroughly.
- Inhalation:** Move to fresh air.
- Skin Contact:** Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
- Eye contact:** Rinse immediately with plenty of water.

Most important symptoms/effects, acute and delayed

Symptoms: May cause skin and eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
1-Methoxy-2-Propanol	TWA	50 ppm	US. ACGIH Threshold Limit Values

			(02 2013)
	STEL	100 ppm	US. ACGIH Threshold Limit Values (02 2013)

Chemical name	type	Exposure Limit Values	Source
1-Methoxy-2-Propanol	TWA	50 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	75 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1-Methoxy-2-Propanol	TWAEV	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1-Methoxy-2-Propanol	TWA	100 ppm 369 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	150 ppm 553 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)

Appropriate Engineering Controls Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

- General information:** Use personal protective equipment as required.
- Eye/face protection:** Wear goggles/face shield.
- Skin Protection**
 - Hand Protection:** Use suitable protective gloves if risk of skin contact.
 - Other:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
- Hygiene measures:** Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin. Observe good industrial hygiene practices.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	White
Odor:	Slight odor
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.1
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	Amines. Epoxides. Avoid contact with acids. Bases, alkalies (organic).
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.
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Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	May cause an allergic skin reaction.
Eye contact:	Eye contact is possible and should be avoided.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral	
Product:	No data available.
Dermal	
Product:	ATEmix: 10,568.97 mg/kg
Inhalation	
Product:	No data available.

Repeated dose toxicity	
Product:	No data available.

Skin Corrosion/Irritation	
Product:	No data available.

Serious Eye Damage/Eye Irritation	
Product:	No data available.

Specified substance(s):	
Bisphenol A	in vivo (Rabbit, 24 hrs): Slightly irritating
Polyglycidyl Ether Resin	
1-Methoxy-2-Propanol	in vivo (Rabbit, 24 - 72 hrs): Not irritating

Respiratory or Skin Sensitization	
Product:	No data available.

Carcinogenicity	
Product:	No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:**

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability**Biodegradation**

Product: No data available.

**BOD/COD Ratio
Product:** No data available.

**Bioaccumulative Potential
Bioconcentration Factor (BCF)
Product:** No data available.

**Partition Coefficient n-octanol / water (log Kow)
Product:** No data available.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
1-Methoxy-2-Propanol	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
1-Methoxy-2-Propanol	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Bisphenol A Polyglycidyl	500 lbs
Ether Resin	
1-Methoxy-2-Propanol	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Massachusetts RTK - Substance List

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Pennsylvania RTK - Hazardous Substances

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Other Regulations:

When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
68 g/l

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date:	07/28/2015
Version #:	1.0
Further Information:	No data available.

Disclaimer:

For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Product identifier: TREMprime Multi Surface Urethane Primer-Part B
Product Code: 252102 504

Recommended use and restriction on use

Recommended use: Sealant
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Cleveland OH 44122
US

Contact person:	EH&S Department
Telephone:	216-292-5000
Emergency telephone number:	1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin sensitizer	Category 1
Acute toxicity, oral	80.43 %
Acute toxicity, dermal	80.44 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	99 %
Acute hazards to the aquatic environment	99.98 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: May cause an allergic skin reaction.

Precautionary Statement

- Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Isophoronediamine	2855-13-2	0.1 - 1%
m-Xylenediamine	1477-55-0	0.1 - 1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- Ingestion:** Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.
- Inhalation:** Move to fresh air.
- Skin Contact:** If skin irritation occurs: Get medical advice/attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
- Eye contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: May cause skin and eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
m-Xylenediamine	Ceiling	0.1 mg/m ³	US. ACGIH Threshold Limit Values

			(2011)
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Appropriate Engineering Controls Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

- General information:** Use personal protective equipment as required.
- Eye/face protection:** Wear goggles/face shield.
- Skin Protection**
 - Hand Protection:** Use suitable protective gloves if risk of skin contact.
 - Other:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
- Hygiene measures:** Observe good industrial hygiene practices. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties

Appearance

- Physical state:** liquid
- Form:** liquid
- Color:** White
- Odor:** Slight odor
- Odor threshold:** No data available.
- pH:** No data available.
- Melting point/freezing point:** No data available.
- Initial boiling point and boiling range:** > 100 °C > 212 °F
- Flash Point:** No data available.
- Evaporation rate:** Slower than Ether
- Flammability (solid, gas):** No
- Upper/lower limit on flammability or explosive limits**
 - Flammability limit - upper (%):** No data available.
 - Flammability limit - lower (%):** No data available.
 - Explosive limit - upper (%):** No data available.
 - Explosive limit - lower (%):** No data available.
- Vapor pressure:** No data available.
- Vapor density:** Vapors are heavier than air and may travel along the floor and in the bottom of containers.
- Relative density:** 1.1
- Solubility(ies)**
 - Solubility in water:** Miscible with water.
 - Solubility (other):** No data available.

Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	Amines. Epoxides. Avoid contact with acids. Bases, alkalies (organic).
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information**Information on likely routes of exposure**

Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.
Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes mild skin irritation. May cause an allergic skin reaction.
Eye contact:	Eye contact is possible and should be avoided.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product:	No data available.
Dermal Product:	No data available.
Inhalation Product:	No data available.

Repeated dose toxicity Product:	No data available.
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Skin Corrosion/Irritation Product:	No data available.
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Serious Eye Damage/Eye Irritation**Product:** No data available.**Specified substance(s):**

Isophoronediamine in vivo (Rabbit, 24 hrs): Strongly irritant and corrosive effect

Respiratory or Skin Sensitization**Product:** No data available.**Carcinogenicity****Product:** No data available.**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity**In vitro****Product:** No data available.**In vivo****Product:** No data available.**Reproductive toxicity****Product:** No data available.**Specific Target Organ Toxicity - Single Exposure****Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** No data available.**Other effects:** No data available.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:**

Fish**Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Specified substance(s):**

Isophoronediamine EC 50 (Water flea (Daphnia magna), 24 h): 31.9 - 45.8 mg/l Intoxication

Chronic hazards to the aquatic environment:**Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** No data available.**Persistence and Degradability****Biodegradation****Product:** No data available.**BOD/COD Ratio****Product:** No data available.**Bioaccumulative Potential****Bioconcentration Factor (BCF)****Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** No data available.**Mobility in Soil:** No data available.**Other Adverse Effects:** No data available.**13. Disposal considerations****Disposal instructions:** Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Contaminated Packaging:** No data available.

14. Transport information**TDG:**

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Formaldehyde	Acute toxicity Skin irritation Skin sensitization Flammability respiratory tract irritation Respiratory sensitization Cancer Eye irritation

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene glycol	5000 lbs.
Potassium hydroxide	1000 lbs.
Formaldehyde	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	100 lbs.	500 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene glycol	5000 lbs.
Potassium hydroxide	1000 lbs.
Formaldehyde	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	500lbs
Isophoronediamine	500 lbs
m-Xylenediamine	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	15000 lbs

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

Chemical Identity

Formaldehyde

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Other Regulations:

When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
68 g/l

Inventory Status:

Australia AICS:

One or more components in this product are not listed on or exempt from the Inventory.

Canada DSL Inventory List:

All components in this product are listed on or exempt from the Inventory.

EINECS, ELINCS or NLP:

One or more components in this product are

	not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date: 07/28/2015

Version #: 1.0

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

TREMPreme Multi Surface Urethane Primer- Part A

TREMPreme Multi Surface Urethane Primer-Part B

SAFETY DATA SHEET

1. Identification

Product identifier: TREMPreme Multi Surface Urethane Primer- Part A
Product Code: 252102 504

Recommended use and restriction on use

Recommended use: Sealant
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Cleveland OH 44122
US

Contact person:	EH&S Department
Telephone:	216-292-5000
Emergency telephone number:	1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin sensitizer	Category 1
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Unknown toxicity - Health

Acute toxicity, oral	79.62 %
Acute toxicity, dermal	79.62 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	99.3 %

Unknown toxicity - Environment

Acute hazards to the aquatic environment	99.3 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: May cause an allergic skin reaction.

Precautionary Statement

- Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Bisphenol A Polyglycidyl Ether Resin	25068-38-6	5 - 10%
1-Methoxy-2-Propanol	107-98-2	1 - 5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- Ingestion:** Rinse mouth thoroughly.
- Inhalation:** Move to fresh air.
- Skin Contact:** Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.

Eye contact: Rinse immediately with plenty of water.

Most important symptoms/effects, acute and delayed

Symptoms: May cause skin and eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
1-Methoxy-2-Propanol	TWA	50 ppm	US. ACGIH Threshold Limit Values

			(02 2013)
	STEL	100 ppm	US. ACGIH Threshold Limit Values (02 2013)

Chemical name	type	Exposure Limit Values	Source
1-Methoxy-2-Propanol	TWA	50 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	75 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1-Methoxy-2-Propanol	TWAEV	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1-Methoxy-2-Propanol	TWA	100 ppm 369 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	150 ppm 553 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)

Appropriate Engineering Controls Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

- General information:** Use personal protective equipment as required.
- Eye/face protection:** Wear goggles/face shield.
- Skin Protection**
 - Hand Protection:** Use suitable protective gloves if risk of skin contact.
 - Other:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
- Hygiene measures:** Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin. Observe good industrial hygiene practices.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	White
Odor:	Slight odor
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.1
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	Amines. Epoxides. Avoid contact with acids. Bases, alkalies (organic).
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion: May be ingested by accident. Ingestion may cause irritation and malaise.

Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	May cause an allergic skin reaction.
Eye contact:	Eye contact is possible and should be avoided.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral	
Product:	No data available.
Dermal	
Product:	ATEmix: 10,568.97 mg/kg
Inhalation	
Product:	No data available.

Repeated dose toxicity	
Product:	No data available.

Skin Corrosion/Irritation	
Product:	No data available.

Serious Eye Damage/Eye Irritation	
Product:	No data available.

Specified substance(s):	
Bisphenol A	in vivo (Rabbit, 24 hrs): Slightly irritating
Polyglycidyl Ether Resin	
1-Methoxy-2-Propanol	in vivo (Rabbit, 24 - 72 hrs): Not irritating

Respiratory or Skin Sensitization	
Product:	No data available.

Carcinogenicity	
Product:	No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:**

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability**Biodegradation**

Product: No data available.

**BOD/COD Ratio
Product:** No data available.

**Bioaccumulative Potential
Bioconcentration Factor (BCF)
Product:** No data available.

**Partition Coefficient n-octanol / water (log Kow)
Product:** No data available.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
1-Methoxy-2-Propanol	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
1-Methoxy-2-Propanol	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Bisphenol A Polyglycidyl	500 lbs
Ether Resin	
1-Methoxy-2-Propanol	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Massachusetts RTK - Substance List

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Pennsylvania RTK - Hazardous Substances

<u>Chemical Identity</u>
1-Methoxy-2-Propanol

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Other Regulations:

When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
68 g/l

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date:	07/28/2015
Version #:	1.0
Further Information:	No data available.

Disclaimer:

For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Product identifier: TREMprime Multi Surface Urethane Primer-Part B
Product Code: 252102 504

Recommended use and restriction on use

Recommended use: Sealant
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Cleveland OH 44122
US

Contact person: EH&S Department
Telephone: 216-292-5000
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin sensitizer Category 1

Acute toxicity, oral 80.43 %

Acute toxicity, dermal 80.44 %

Acute toxicity, inhalation, vapor 100 %

Acute toxicity, inhalation, dust or mist 99 %

Acute hazards to the aquatic environment 99.98 %

Chronic hazards to the aquatic environment 100 %

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: May cause an allergic skin reaction.

Precautionary Statement

- Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Isophoronediamine	2855-13-2	0.1 - 1%
m-Xylenediamine	1477-55-0	0.1 - 1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- Ingestion:** Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.
- Inhalation:** Move to fresh air.
- Skin Contact:** If skin irritation occurs: Get medical advice/attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
- Eye contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: May cause skin and eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
m-Xylenediamine	Ceiling	0.1 mg/m ³	US. ACGIH Threshold Limit Values

			(2011)
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Appropriate Engineering Controls Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

- General information:** Use personal protective equipment as required.
- Eye/face protection:** Wear goggles/face shield.
- Skin Protection**
 - Hand Protection:** Use suitable protective gloves if risk of skin contact.
 - Other:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
- Hygiene measures:** Observe good industrial hygiene practices. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties

Appearance

- Physical state:** liquid
- Form:** liquid
- Color:** White
- Odor:** Slight odor
- Odor threshold:** No data available.
- pH:** No data available.
- Melting point/freezing point:** No data available.
- Initial boiling point and boiling range:** > 100 °C > 212 °F
- Flash Point:** No data available.
- Evaporation rate:** Slower than Ether
- Flammability (solid, gas):** No
- Upper/lower limit on flammability or explosive limits**
 - Flammability limit - upper (%):** No data available.
 - Flammability limit - lower (%):** No data available.
 - Explosive limit - upper (%):** No data available.
 - Explosive limit - lower (%):** No data available.
- Vapor pressure:** No data available.
- Vapor density:** Vapors are heavier than air and may travel along the floor and in the bottom of containers.
- Relative density:** 1.1
- Solubility(ies)**
 - Solubility in water:** Miscible with water.
 - Solubility (other):** No data available.

Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	Amines. Epoxides. Avoid contact with acids. Bases, alkalies (organic).
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information**Information on likely routes of exposure**

Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.
Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes mild skin irritation. May cause an allergic skin reaction.
Eye contact:	Eye contact is possible and should be avoided.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product:	No data available.
Dermal Product:	No data available.
Inhalation Product:	No data available.

Repeated dose toxicity Product:	No data available.
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Skin Corrosion/Irritation Product:	No data available.
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Serious Eye Damage/Eye Irritation**Product:** No data available.**Specified substance(s):**

Isophoronediamine in vivo (Rabbit, 24 hrs): Strongly irritant and corrosive effect

Respiratory or Skin Sensitization**Product:** No data available.**Carcinogenicity****Product:** No data available.**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity**In vitro****Product:** No data available.**In vivo****Product:** No data available.**Reproductive toxicity****Product:** No data available.**Specific Target Organ Toxicity - Single Exposure****Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** No data available.**Other effects:** No data available.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:**

Fish**Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Specified substance(s):**

Isophoronediamine EC 50 (Water flea (Daphnia magna), 24 h): 31.9 - 45.8 mg/l Intoxication

Chronic hazards to the aquatic environment:**Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** No data available.**Persistence and Degradability****Biodegradation****Product:** No data available.**BOD/COD Ratio****Product:** No data available.**Bioaccumulative Potential****Bioconcentration Factor (BCF)****Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** No data available.**Mobility in Soil:**

No data available.

Other Adverse Effects:

No data available.

13. Disposal considerations**Disposal instructions:**

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging:

No data available.

14. Transport information**TDG:**

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Formaldehyde	Acute toxicity Skin irritation Skin sensitization Flammability respiratory tract irritation Respiratory sensitization Cancer Eye irritation

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene glycol	5000 lbs.
Potassium hydroxide	1000 lbs.
Formaldehyde	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	100 lbs.	500 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene glycol	5000 lbs.
Potassium hydroxide	1000 lbs.
Formaldehyde	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	500lbs
Isophoronediamine	500 lbs
m-Xylenediamine	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	15000 lbs

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

Chemical Identity

Formaldehyde

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Other Regulations:

When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
68 g/l

Inventory Status:

Australia AICS:

One or more components in this product are not listed on or exempt from the Inventory.

Canada DSL Inventory List:

All components in this product are listed on or exempt from the Inventory.

EINECS, ELINCS or NLP:

One or more components in this product are

	not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date:	07/28/2015
Version #:	1.0
Further Information:	No data available.
Disclaimer:	For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Material name: Vulkem® 346
Material: 874712 805

Recommended use and restriction on use

Recommended use: Coatings
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Beachwood OH 44122
US

Contact person: EH&S Department
Telephone: 216-292-5000
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Acute toxicity (Inhalation - dust and mist) Category 4
Serious Eye Damage/Eye Irritation Category 2B
Respiratory sensitizer Category 1
Skin sensitizer Category 1
Carcinogenicity Category 2

Unknown toxicity - Health

Acute toxicity, oral 16.36 %
Acute toxicity, dermal 32.24 %
Acute toxicity, inhalation, vapor 99.9 %
Acute toxicity, inhalation, dust or mist 99.3 %

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Unknown toxicity - Environment

Acute hazards to the aquatic environment	61.56 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Harmful if inhaled.
Causes eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
Harmful to aquatic life.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid release to the environment.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor/... 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/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation or rash occurs: Get medical advice/attention. Call a POISON CENTER/doctor if you feel unwell. Specific treatment (see on this label). Wash contaminated clothing before reuse. In case of fire: Use... to extinguish.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Xylene	1330-20-7	10 - <25%
Talc	14807-96-6	10 - <20%
Titanium dioxide	13463-67-7	10 - <20%
Ethylbenzene	100-41-4	5 - <10%
Amorphous silica	7631-86-9	1 - <5%
Aluminum oxide	1344-28-1	0 - <1%
Dibutyl tin dilaurate	77-58-7	0.1 - <1%
Dolomite	16389-88-1	0.1 - <1%
Magnesite	546-93-0	0.1 - <1%
Isophorone Diisocyanate	4098-71-9	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Inhalation: Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

Skin Contact: Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.

Eye contact: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: Respiratory tract irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

7. Handling and storage

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid contact with eyes. Wash hands thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store locked up. Store in a well-ventilated place. Store in a cool place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Xylene	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm 655 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	350 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	ST ESL	80 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL	42 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL	180 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	STEL	150 ppm 655 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	Ceiling	300 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

	TWA PEL	100 ppm 435 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA	100 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Talc - Respirable fraction.	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (2011)
Talc	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Talc - Respirable.	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.1 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Titanium dioxide	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (2011)
Titanium dioxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Titanium dioxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Ethylbenzene	TWA	20 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Amorphous silica	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.8 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Aluminum oxide - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum oxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	US. ACGIH Threshold Limit Values (2011)
	TWA	0.1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	0.1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Dolomite - Inhalable particles.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (03 2016)
Dolomite - Respirable	TWA	3 mg/m3	US. ACGIH Threshold Limit Values (03 2016)

particles.			
Dolomite - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Dolomite - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Dolomite - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Magnesite - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Magnesite - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Isophorone Diisocyanate	TWA	0.005 ppm	US. ACGIH Threshold Limit Values (2011)

Chemical name	Type	Exposure Limit Values	Source
Xylene	TWA	100 ppm 434 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	STEL	150 ppm 651 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Xylene	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Xylene	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)

Talc - Respirable.	TWA	2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Talc - Respirable dust.	TWA	3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Talc	TWA	2 Fibers/cc	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)
Talc - Respirable fraction.	TWA	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011)
Ethylbenzene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Ethylbenzene	STEL	125 ppm 543 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Amorphous silica - Total	TWA	4 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Amorphous silica - Respirable.	TWA	1.5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Amorphous silica - Respirable dust.	TWA	6 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Isophorone Diisocyanate	TWA	0.005 ppm 0.045 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)

Chemical name	Type	Exposure Limit Values	Source
Xylene	TWA	100 ppm 434 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	STEL	150 ppm 651 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Xylene	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Xylene	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Talc - Respirable.	TWA	2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Talc - Respirable dust.	TWA	3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Talc	TWA	2 Fibers/cc	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)
Talc - Respirable fraction.	TWA	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011)
Ethylbenzene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Ethylbenzene	STEL	125 ppm 543 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)

Amorphous silica - Total	TWA	4 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Amorphous silica - Respirable.	TWA	1.5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Amorphous silica - Respirable dust.	TWA	6 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Aluminum oxide - Respirable.	TWA	1 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Aluminum oxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
Aluminum oxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
Aluminum oxide - Respirable fraction.	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Aluminum oxide - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Aluminum oxide - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Aluminum oxide - Total dust. - as Al	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.1 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Dibutyl tin dilaurate - as Sn	TWA	0.1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)

Dolomite - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
Dolomite - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
Dolomite - Respirable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Dolomite - Inhalable fraction.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Dolomite - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Magnesite - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Isophorone Diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Isophorone Diisocyanate	TWA	0.005 ppm 0.045 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Toluene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Toluene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Toluene	TWA	50 ppm 188 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Petroleum distillates - Non-aerosol. - as total hydrocarbon vapor	TWA	200 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Petroleum distillates	TWA	525 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Petroleum distillates - Non-aerosol. - as total hydrocarbon vapor	TWA	200 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	200 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)

Carbon Black - Inhalable	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011)
Carbon Black - Inhalable fraction.	TWA	3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Carbon Black	TWA	3.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Stoddard solvent (Mineral Spirits)	STEL	580 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	290 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Stoddard solvent (Mineral Spirits)	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Stoddard solvent (Mineral Spirits)	TWA	100 ppm 525 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
2-Ethylhexanoic acid - Vapor and aerosol, inhalable.	TWA	5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
2-Ethylhexanoic acid - Inhalable fraction and vapor.	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Naphthalene	STEL	15 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	10 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Naphthalene	TWA	10 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Naphthalene	TWA	10 ppm 52 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	STEL	15 ppm 79 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)

Benzene	STEL	2.5 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.5 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Benzene	TWA	0.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	STEL	2.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Benzene	TWA	1 ppm 3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	STEL	5 ppm 15.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Chromium	TWA	0.5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Chromium - as Cr	TWA	0.5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Chromium	TWA	0.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Nickel	TWA	0.05 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
Nickel - Inhalable fraction. - as Ni	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Nickel	TWA	1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Cobalt - as Co	TWA	0.02 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Cobalt - as Co	TWA	0.02 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Cobalt - as Co	TWA	0.02 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Arsenic - as As	TWA	0.01 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Arsenic - as As	TWA	0.01 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	STEL	0.05 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Arsenic - as As	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Beryllium - as Be	TWA	0.00015 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Beryllium - Inhalable - as Be	TWA	0.00005 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (06 2017)
Beryllium - Inhalable fraction. - as Be	TWA	0.00005 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEI (03 2013)
Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEI (02 2014)

Appropriate Engineering Controls

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information:

Use explosion-proof ventilation equipment. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection:

Wear goggles/face shield.

Skin Protection

Hand Protection:

Use suitable protective gloves if risk of skin contact.

Other:

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures:

Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not smoke. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Gray
Odor:	Mild petroleum/solvent
Odor threshold:	No data available.
pH:	No data available.

Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	121 °C 250 °F
Flash Point:	27 °C 80 °F (Setaflash Closed Cup)
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.17
Solubility(ies)	
Solubility in water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Heat, sparks, flames.
Incompatible Materials:	Alcohols. Amines. Strong acids. Strong bases. Water, moisture.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes mild skin irritation. May cause an allergic skin reaction.
Eye contact:	Causes eye irritation.

Ingestion: May be ingested by accident. Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Xylene LD 50 (Rat): 3,523 mg/kg

Titanium dioxide LD 50 (Rat): > 5,000 mg/kg

Ethylbenzene LD 50 (Rat): 3,500 mg/kg

Amorphous silica LD 50 (Rat): > 5,000 mg/kg

Aluminum oxide LD 50 (Rat): > 10,000 mg/kg

Dibutyl tin dilaurate LD 50 (Rat): 2,071 mg/kg

Magnesite LD 50 (Rat): > 2,000 mg/kg

Isophorone Diisocyanate LD 50 (Rat): 4,814 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Xylene	LD 50 (Rabbit): 12,126 mg/kg
Ethylbenzene	LD 50 (Rabbit): 17,800 mg/kg
Amorphous silica	LD 50 (Rabbit): > 2,000 mg/kg
Isophorone Diisocyanate	LD 50 (Rat): > 7,000 mg/kg

**Inhalation
Product:**

ATEmix: 2.07 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

Xylene	in vivo (Rabbit): Moderate irritant Experimental result, Weight of Evidence study
Titanium dioxide	in vivo (Rabbit): Not irritant Experimental result, Supporting study
Amorphous silica	in vivo (Rabbit): Not irritant Experimental result, Key study
Aluminum oxide	in vivo (Rabbit): Not irritant Experimental result, Key study
Dibutyl tin dilaurate	In vitro (Human, in vitro reconstituted epidermis model): Not irritant Experimental result, Supporting study
Magnesite	In vitro (Human, in vitro reconstituted epidermis model): Not irritant Experimental result, Key study

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Xylene	Rabbit, 24 hrs: Moderately irritating
Titanium dioxide	Rabbit, 24 hrs: Not irritating
Ethylbenzene	Rabbit, 7 d: Slightly irritating

Amorphous silica	Rabbit, 24 hrs: Not irritating
Aluminum oxide	Rabbit, 24 hrs: Not irritating
Dibutyl tin dilaurate	Rabbit, 24 hrs: Highly irritating
Magnesite	Reconstituted Corneal Epithelium model, 10 min: Not irritating

Respiratory or Skin Sensitization

Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity

Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Talc	Overall evaluation: Not classifiable as to carcinogenicity to humans. Overall evaluation: Possibly carcinogenic to humans.
Titanium dioxide	Overall evaluation: Possibly carcinogenic to humans.
Ethylbenzene	Overall evaluation: Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Xylene LC 50 (Fathead minnow (Pimephales promelas), 96 h): 13.41 mg/l Mortality

Ethylbenzene LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 4.2 mg/l Mortality

Dibutyl tin dilaurate LC 50 (Ide, silver or golden orfe (Leuciscus idus), 48 h): 2 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Titanium dioxide EC 50 (Water flea (Daphnia magna), 48 h): > 1,000 mg/l Intoxication

Ethylbenzene EC 50 (Water flea (Daphnia magna), 48 h): 1.37 - 4.4 mg/l Intoxication

Dibutyl tin dilaurate EC 50 (Water flea (Daphnia magna), 24 h): 0.66 mg/l Intoxication

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Specified substance(s):
Xylene Log Kow: 3.12 - 3.20
Ethylbenzene Log Kow: 3.15
Dibutyl tin dilaurate Log Kow: 3.12

Mobility in soil: No data available.

Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:
UN1263, PAINT, 3, PG III

CFR / DOT:
UN1263, Paint, 3, PG III

IMDG:
UN1263, PAINT, 3, PG III

Further Information:
The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information

US Federal Regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Benzene	Blood respiratory tract irritation Central nervous system Flammability Cancer Skin Aspiration Eye
Arsenic	Acute toxicity Skin Liver Cancer Respiratory irritation Nervous system
Beryllium	beryllium sensitization skin, eye, and respiratory tract irritation Skin sensitization lung effects (CBD and acute beryllium disease) Cancer

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
Ethylbenzene	1000 lbs.
Toluene	1000 lbs.
Naphthalene	100 lbs.
Benzene	10 lbs.
Chromium	5000 lbs.
Nickel	100 lbs.
Arsenic	1 lbs.
Beryllium	10 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Fire Hazard
- Immediate (Acute) Health Hazards
- Delayed (Chronic) Health Hazard
- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route or exposure)
- Serious eye damage or eye irritation
- Respiratory or Skin Sensitization
- Carcinogenicity
- Hazards Not Otherwise Classified (HNOC)

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Isophorone Diisocyanate	500 lbs.	500 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
Ethylbenzene	1000 lbs.
Isophorone Diisocyanate	
Toluene	1000 lbs.
Naphthalene	100 lbs.
Benzene	10 lbs.
Chromium	5000 lbs.
Nickel	100 lbs.
Arsenic	1 lbs.
Beryllium	10 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Isophorone Diisocyanate	500lbs
Xylene	10000 lbs
Talc	10000 lbs
Titanium dioxide	10000 lbs
Ethylbenzene	10000 lbs
Amorphous silica	10000 lbs
Aluminum oxide	10000 lbs
Dibutyl tin dilaurate	10000 lbs
Dolomite	10000 lbs
Magnesite	10000 lbs

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>
Xylene
Ethylbenzene

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	Reportable quantity: lbs.

US State Regulations

US. California Proposition 65



WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Xylene
Talc
Titanium dioxide
Ethylbenzene
Amorphous silica

US. Massachusetts RTK - Substance List

Chemical Identity

Xylene
Talc
Titanium dioxide
Ethylbenzene
Amorphous silica
Isophorone Diisocyanate

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Xylene
Talc
Titanium dioxide
Ethylbenzene
Amorphous silica

US. Rhode Island RTK

Chemical Identity

Xylene
Talc
Titanium dioxide
Ethylbenzene

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

VOC:

Regulatory VOC (less water and
exempt solvent) : 315 g/l
VOC Method 310 : 26.89 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Mexico INSQ:	One or more components in this product are not listed on or exempt from the Inventory.
Taiwan Chemical Substance Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision
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Revision Date: 03/08/2019

Version #: 1.2

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Material name: Vulkem® 350 R
Material: 450712 805

Recommended use and restriction on use

Recommended use: Coatings
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Beachwood OH 44122
US

Contact person: EH&S Department
Telephone: 216-292-5000
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Skin Corrosion/Irritation Category 2
Respiratory sensitizer Category 1
Skin sensitizer Category 1
Germ Cell Mutagenicity Category 1B
Carcinogenicity Category 1A
Toxic to reproduction Category 1B

Unknown toxicity - Health

Acute toxicity, oral 12.57 %
Acute toxicity, dermal 22.68 %
Acute toxicity, inhalation, vapor 99.99 %
Acute toxicity, inhalation, dust or mist 99.82 %

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Unknown toxicity - Environment

Acute hazards to the aquatic environment	83.78 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Harmful to aquatic life.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Wash contaminated clothing before reuse. In case of fire: Use... to extinguish.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC):

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Aromatic petroleum distillates	64742-95-6	10 - 30%
Clay	1332-58-7	10 - 30%
Calcium Carbonate (Limestone)	1317-65-3	10 - 30%
1,2,4-Trimethylbenzene	95-63-6	7 - 13%
Titanium dioxide	13463-67-7	3 - 7%
1,3,5-Trimethylbenzene	108-67-8	1 - 5%
Trimethyl benzene (mixed isomers)	25551-13-7	1 - 5%
1,2,3-Trimethylbenzene	526-73-8	0.5 - 1.5%
Xylene	1330-20-7	0.5 - 1.5%
Cumene	98-82-8	0.1 - 1%
Magnesite	546-93-0	0.1 - 1%
Amorphous silica	7631-86-9	0.1 - 1%
Polymethylene polyphenyl isocyanate	9016-87-9	0.1 - 1%
Butyl benzyl phthalate	85-68-7	0.1 - 1%
Aluminum hydroxide	21645-51-2	0.1 - 1%
Aluminum oxide	1344-28-1	0.1 - 1%
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7	0.1 - 1%
2,4-Toluene diisocyanate	584-84-9	0.1 - 1%
4,4'-Methylene bis(phenylisocyanate)	101-68-8	0.1 - 1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion:

Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Inhalation:

Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

Skin Contact:

Take off immediately all contaminated clothing. Get medical attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: Respiratory tract irritation. Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.

Indication of immediate medical attention and special treatment needed

Treatment: Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

7. Handling and storage

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Wash hands thoroughly after handling. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store locked up. Store in a well-ventilated place. Store in a cool place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Clay - Respirable fraction.	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Clay - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Clay - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Clay - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Calcium Carbonate (Limestone) - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Calcium Carbonate (Limestone) - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
1,2,4-Trimethylbenzene	REL	25 ppm 125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	25 ppm 125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	25 ppm 125 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL	25 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)

	ST ESL	140 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	700 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	125 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	TWA PEL	25 ppm 125 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
Titanium dioxide	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (2011)
Titanium dioxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Titanium dioxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
1,3,5-Trimethylbenzene	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
1,2,3-Trimethylbenzene	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
Xylene	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm 655 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	350 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	ST ESL	80 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL	42 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL	180 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	STEL	150 ppm 655 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

	Ceiling	300 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	100 ppm 435 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA	100 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Cumene	TWA	50 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	50 ppm 245 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Magnesite - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Magnesite - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Amorphous silica	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.8 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Aluminum hydroxide - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum hydroxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum hydroxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum oxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m3	US. ACGIH Threshold Limit Values (2011)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.05 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2016)
	OSHA_ACT	0.025 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	PEL	0.05 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWA	2.4 millions of particles per cubic foot	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)

		of air	
	TWA	0.1 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
2,4-Toluene diisocyanate - Inhalable fraction and vapor.	STEL	0.005 ppm	US. ACGIH Threshold Limit Values (03 2016)
	TWA	0.001 ppm	US. ACGIH Threshold Limit Values (03 2016)
2,4-Toluene diisocyanate	Ceiling	0.02 ppm 0.14 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	US. ACGIH Threshold Limit Values (2011)
	Ceiling	0.02 ppm 0.2 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

Chemical name	Type	Exposure Limit Values	Source
Clay - Respirable.	TWA	2 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Clay - Respirable dust.	TWA	5 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Clay - Respirable fraction.	TWA	2 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (08 2017)
Calcium Carbonate (Limestone) - Total dust.	STEL	20 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	10 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)

Calcium Carbonate (Limestone) - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Calcium Carbonate (Limestone) - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Trimethyl benzene (mixed isomers)	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	STEL	150 ppm 651 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Xylene	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)

Xylene	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Cumene	STEL	75 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Cumene	TWA	50 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Cumene	TWA	50 ppm 246 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Polymethylene polyphenyl isocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
2,4-Toluene diisocyanate	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
2,4-Toluene diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
2,4-Toluene diisocyanate	TWA	0.005 ppm 0.036 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	STEL	0.02 ppm 0.14 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
4,4'-Methylene bis(phenylisocyanate)	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm 0.051 mg/m3	Biological or Chemical Agents) (06 2015) Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
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Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEI (03 2013)
2,4-Toluene diisocyanate (Toluene diamine (sum of 2,4- and 2,6-isomers), with hydrolysis: Sampling time: End of shift.)	5 µg/g (Creatinine in urine)	ACGIH BEI (03 2018)

Appropriate Engineering Controls

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information:

Use explosion-proof ventilation equipment. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

Eye/face protection:

Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection:

Use suitable protective gloves if risk of skin contact.

Other:

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures:

Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not smoke. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Gray
Odor:	Mild petroleum/solvent
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	48 °C 118 °F(Setaflash Closed Cup)
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.177
Solubility(ies)	
Solubility in water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Heat, sparks, flames.
Incompatible Materials:	Alcohols. Amines. Strong acids. Strong bases. Water, moisture.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

- Inhalation:** In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
- Skin Contact:** Causes skin irritation. May cause an allergic skin reaction.
- Eye contact:** Eye contact is possible and should be avoided.
- Ingestion:** May be ingested by accident. Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation:** No data available.
- Skin Contact:** No data available.
- Eye contact:** No data available.
- Ingestion:** No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

- Oral Product:** ATEmix: 31,803.36 mg/kg
- Dermal Product:** ATEmix: 25,314.61 mg/kg
- Inhalation Product:** Not classified for acute toxicity based on available data.

Specified substance(s):

Clay	LC 50 (Rat): > 20 mg/l
1,2,4-Trimethylbenzene	LC 50 (Rat): 10,200 mg/m3
Titanium dioxide	LC 50 (Rat): 3.43 mg/l
1,3,5-Trimethylbenzene	LC 50 (Rat): 10,200 mg/m3
Amorphous silica	LC 50 (Rat): > 2.08 mg/l
Aluminum hydroxide	LC 50 (Rat): 7.6 mg/l
Aluminum oxide	LC 50 (Rat): 7.6 mg/l
2,4-Toluene diisocyanate	LC 50 (Rat): 14 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

Aromatic petroleum distillates	in vivo (Rabbit): Irritating Experimental result, Key study
1,2,4-Trimethylbenzene	in vivo (Rabbit): Irritating Read-across from supporting substance (structural analogue or surrogate), Key study
Titanium dioxide	in vivo (Rabbit): Not irritant Experimental result, Supporting study
1,3,5-Trimethylbenzene	in vivo (Rabbit): Irritating Experimental result, Key study
Xylene	in vivo (Rabbit): Moderate irritant Experimental result, Weight of Evidence study
Cumene	in vivo (Rabbit): Not irritant Experimental result, Key study
Magnesite	In vitro (Human, in vitro reconstituted epidermis model): Not irritant Experimental result, Key study
Amorphous silica	in vivo (Rabbit): Not irritant Experimental result, Key study
Butyl benzyl phthalate	in vivo (Rabbit): Not irritant Experimental result, Key study
Aluminum hydroxide	in vivo (Rabbit): Not classified as an Irritant Experimental result, Key study
Aluminum oxide	in vivo (Rabbit): Not irritant Experimental result, Key study
2,4-Toluene diisocyanate	in vivo (Rabbit): Moderately irritating Experimental result, Supporting study
4,4'-Methylene bis(phenylisocyanate)	in vivo (Rabbit): Irritating Read-across based on grouping of substances (category approach), Key study

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Aromatic petroleum distillates	Rabbit, 24 - 72 hrs: Not irritating
1,2,4-Trimethylbenzene	Rabbit, 30 min: Not irritating
Titanium dioxide	Rabbit, 24 hrs: Not irritating
1,3,5-Trimethylbenzene	Rabbit, 30 min: Not irritating
Xylene	Rabbit, 24 hrs: Moderately irritating
Cumene	Rabbit, 24 hrs: Not irritating
Magnesite	Reconstituted Corneal Epithelium model, 10 min: Not irritating

Amorphous silica	Rabbit, 24 hrs: Not irritating
Butyl benzyl phthalate	Rabbit, 24 - 72 hrs: Not irritating
Aluminum hydroxide	Rabbit, 24 hrs: Not irritating
Aluminum oxide	Rabbit, 24 hrs: Not irritating
2,4-Toluene diisocyanate	Rabbit, 24 - 72 hrs: Category 2

Respiratory or Skin Sensitization

Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide	Overall evaluation: Possibly carcinogenic to humans.
Cumene	Overall evaluation: Possibly carcinogenic to humans.
Crystalline Silica (Quartz)/ Silica Sand	Overall evaluation: Carcinogenic to humans.
2,4-Toluene diisocyanate	Overall evaluation: Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Cumene	Reasonably Anticipated to be a Human Carcinogen.
Crystalline Silica (Quartz)/ Silica Sand	Known To Be Human Carcinogen.
2,4-Toluene diisocyanate	Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product: No data available.

In vivo Product: No data available.

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.
Specified substance(s):
 Cumene Inhalation - vapor: Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.
Specified substance(s):
 1,2,4-Trimethylbenzene LC 50 (Fathead minnow (Pimephales promelas), 96 h): 7.19 - 8.28 mg/l Mortality
 Xylene LC 50 (Fathead minnow (Pimephales promelas), 96 h): 13.41 mg/l Mortality
 Cumene LC 50 (Fathead minnow (Pimephales promelas), 96 h): 6.04 - 6.61 mg/l Mortality
 Butyl benzyl phthalate LC 50 (Fathead minnow (Pimephales promelas), 96 h): 1.39 - 3.88 mg/l Mortality
 2,4-Toluene diisocyanate LC 50 (Fathead minnow (Pimephales promelas), 96 h): 108.8 - 240.4 mg/l Mortality

Aquatic Invertebrates

Product: No data available.
Specified substance(s):
 Titanium dioxide EC 50 (Water flea (Daphnia magna), 48 h): > 1,000 mg/l Intoxication
 Trimethyl benzene (mixed isomers) LC 50 (Daggerblade grass shrimp (Palaemonetes pugio), 24 h): 7 mg/l Mortality
 Cumene LC 50 (Water flea (Daphnia magna), 48 h): 7.9 - 45.1 mg/l Mortality

Butyl benzyl phthalate EC 50 (Water flea (Daphnia magna), 48 h): > 10 mg/l Intoxication
EC 50 (Opossum shrimp (Americamysis bahia), 48 h): > 0.9 mg/l Mortality
EC 50 (Water flea (Daphnia magna), 24 h): > 10 mg/l Intoxication
EC 50 (Water flea (Daphnia magna), 21 d): > 0.76 mg/l Intoxication
EC 50 (Water flea (Daphnia magna), 14 d): > 0.76 mg/l Intoxication

Chronic hazards to the aquatic environment:**Fish**

Product: No data available.

Specified substance(s):

Butyl benzyl phthalate NOAEL (Pimephales promelas, 126 d): 64.6 - 67.5 µg/l Experimental result, Key study
NOAEL (Oncorhynchus mykiss, 124 d): 0.2 mg/l Experimental result, Key study
LOAEL (Pimephales promelas, 126 d): 18.1 µg/l Experimental result, Key study
LC 50 (Pimephales promelas, 4 d): 2.32 mg/l Experimental result, Supporting study
LC 50 (Pimephales promelas, 14 d): 2.25 mg/l Experimental result, Supporting study

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability**Biodegradation**

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential**Bioconcentration Factor (BCF)**

Product: No data available.

Specified substance(s):

Butyl benzyl phthalate Bluegill (Lepomis macrochirus), Bioconcentration Factor (BCF): 772 (Flow through)

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Xylene Log Kow: 3.12 - 3.20

Cumene Log Kow: 3.66

Butyl benzyl phthalate Log Kow: 4.91

Mobility in soil: No data available.

Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

UN1263, PAINT, 3, PG III

Further Information:

The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Chemical Identity

2,4-Toluene diisocyanate

Reportable quantity

De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Benzene	Blood respiratory tract irritation Central nervous system Flammability Cancer Skin Aspiration Eye

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
Cumene	5000 lbs.
Butyl benzyl phthalate	100 lbs.
2,4-Toluene diisocyanate	100 lbs.
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.
Toluene-2,6-Diisocyanate	100 lbs.
Toluene	1000 lbs.
Benzene	10 lbs.
Naphthalene	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Fire Hazard
- Immediate (Acute) Health Hazards
- Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
2,4-Toluene diisocyanate	100 lbs.	500 lbs.
Toluene-2,6-Diisocyanate	100 lbs.	100 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
Cumene	5000 lbs.
Polymethylene polyphenyl isocyanate	
Butyl benzyl phthalate	100 lbs.
2,4-Toluene diisocyanate	100 lbs.
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.
Toluene-2,6-Diisocyanate	100 lbs.
Toluene	1000 lbs.
Benzene	10 lbs.
Naphthalene	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
2,4-Toluene diisocyanate	500lbs
Toluene-2,6-Diisocyanate	100lbs
Aromatic petroleum distillates	10000 lbs
Clay	10000 lbs
Calcium Carbonate (Limestone)	10000 lbs
1,2,4-Trimethylbenzene	10000 lbs
Titanium dioxide	10000 lbs
1,3,5-Trimethylbenzene	10000 lbs
Trimethyl benzene (mixed isomers)	10000 lbs
1,2,3-Trimethylbenzene	10000 lbs
Xylene	10000 lbs
Cumene	10000 lbs
Magnesite	10000 lbs
Amorphous silica	10000 lbs
Polymethylene polyphenyl isocyanate	10000 lbs
Butyl benzyl phthalate	10000 lbs
Aluminum hydroxide	10000 lbs
Aluminum oxide	10000 lbs
Crystalline Silica (Quartz)/ Silica Sand	10000 lbs
4,4'-Methylene bis(phenylisocyanate)	10000 lbs

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>
1,2,4-Trimethylbenzene
2,4-Toluene diisocyanate

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
2,4-Toluene diisocyanate	lbs
Toluene-2,6-Diisocyanate	lbs

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65



WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Clay
Calcium Carbonate (Limestone)
1,2,4-Trimethylbenzene
Titanium dioxide
1,3,5-Trimethylbenzene
Trimethyl benzene (mixed isomers)
Butyl benzyl phthalate
Crystalline Silica (Quartz)/ Silica Sand
2,4-Toluene diisocyanate

US. Massachusetts RTK - Substance List

Chemical Identity

Clay
Calcium Carbonate (Limestone)
1,2,4-Trimethylbenzene
Titanium dioxide
1,3,5-Trimethylbenzene
Trimethyl benzene (mixed isomers)
Crystalline Silica (Quartz)/ Silica Sand
2,4-Toluene diisocyanate
Toluene-2,6-Diisocyanate
Benzene

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Clay
Calcium Carbonate (Limestone)
1,2,4-Trimethylbenzene
Titanium dioxide
1,3,5-Trimethylbenzene
Trimethyl benzene (mixed isomers)
2,4-Toluene diisocyanate

US. Rhode Island RTK

Chemical Identity

Clay
Calcium Carbonate (Limestone)
1,2,4-Trimethylbenzene
Titanium dioxide
1,3,5-Trimethylbenzene
Trimethyl benzene (mixed isomers)

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol
Not applicable

VOC:
Regulatory VOC (less water and
exempt solvent) : 334 g/l
VOC Method 310 : 28.33 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	One or more components in this product are not listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
Mexico INSQ:	One or more components in this product are not listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Taiwan Chemical Substance Inventory:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision
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Revision Date: 02/05/2019

Version #: 2.1

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**Product Identifier****Product Name:** Crystalline Silica in the form of Quartz – various grades**Synonyms:** Quartz, Crystalline Silica, Silicon Dioxide**Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:****Product Use:** Various commercial and industrial uses**Manufacturer:****UNIMIN CORPORATION**

258 Elm Street

New Canaan, CT 06840

Emergency Telephone Number
(203) 966-8880Telephone Number for Information
(203) 966-8880**SDS Date of Preparation/Revision:** April 2014**SECTION 2: HAZARDS IDENTIFICATION****GHS/ Hazcom 2012 Classification:**

Physical:	Health:	Environmental
Not Hazardous	Carcinogen Category 1A Specific Target Organ Toxicity (Repeated Exposure) Category 1	Not Hazardous

GHS/Hazcom 2012 Label:

**DANGER****Statements of Hazard**

May cause cancer by inhalation.

Causes damage to lungs through prolonged or repeated exposure by inhalation

Response:

If exposed or concerned: Get medical advice.

Disposal:

Dispose of contents/containers in accordance with local regulation.

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

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

Wear protective gloves and safety glasses or goggles.

In case of inadequate ventilation wear respiratory protection.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Component	Percentage
14808-60-7	Crystalline Silica in the form of Quartz	87 - 99.9%

SECTION 4: FIRST AID MEASURES**Gross Inhalation:** Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact: No first aid should be needed since dermal contact with this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Ingestion: If large amounts are swallowed, get immediate medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed: May cause eye irritation with redness and tearing. Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz).

Indication of immediate medical attention and Special Treatment Needed: None required.

SECTION 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Specific Hazards Arising from the Chemical:

Unusual Fire and Explosion Hazards: Not flammable or combustible. Dry powders may accumulate static charge in handling which can be a source of ignition for flammable atmospheres.

Hazardous Combustion Products: None.

Special Protective Equipment and Precautions for Fire-Fighters: None required with respect to this product. Firefighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective equipment.

Environmental Precautions: Report spills and releases as required to appropriate authorities.

Methods and Material for Containment/Cleanup: If uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of contamination, and b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for appropriate disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Use good housekeeping in storage and use areas to prevent accumulation of dust in work area.

To reduce the risk of developing silicosis, lung cancer and other adverse health effects, the ACGIH recommends that the industrial hygienist use every means available to keep exposures below the recommended TLV. NIOSH recommends reducing airborne exposure levels as low as possible below NIOSH's recommended exposure limit, substituting less hazardous materials when feasible, using appropriate respiratory protection when source controls cannot keep exposures below the recommended limit and making medical examinations available to exposed workers.

Use adequate ventilation and dust collection. To minimize exposure, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Refer to the most recent government and local regulations when selecting a respirator. Maintain, clean and fit test respirators in accordance with the most recent government and local

regulations. Maintain and test ventilation and dust collection equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Material Safety Data Sheet. **WARN and TRAIN** employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS AND USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA AND ANY OTHER APPLICABLE REGULATORY PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

Dust can accumulate electrostatic charges due to friction from transfer and mixing operations and cause an electrical spark (ignition source) which can ignite flammable liquids and atmospheres. Provide adequate precautions when adding this product to flammable and combustible mixtures like paints and coating, such as electrical grounding and bonding, inert atmosphere or non-sparking tools. However, bonding and grounds may not eliminate the hazard for static accumulation.

See also American Society for Testing and Materials (ASTM) Standard Practice E1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica".

Additional information on silica hazards and precautionary measures can be found at the following websites:

NIOSH Joint Campaign on Silicosis Prevention <http://www.cdc.gov/niosh/topics/silica/default.html>

OSHA Crystalline Silica Website <http://www.osha.gov/dsg/topics/silicacrystalline/index.html>

MSHA Silicosis Prevention Website <http://www.msha.gov/S&HINFO/SILICO/SILICO.HTM>

NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica Website <http://www.cdc.gov/niosh/docs/2002-129/>

Conditions for Safe Storage, Including any Incompatibilities: Store in a dry location.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Definitions:

NIOSH means National Institute for Occupational Safety and Health.

REL means the NIOSH Recommended Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

TWA means time-weighted average.

OSHA PEL and MSHA Exposure Limit for Crystalline Silica, Quartz $\frac{10 \text{ mg/m}^3}{\text{(Respirable measured as an 8-hour TWA) \% Silica} + 2}$

TLV- 0.025 mg/m³ 8-hour TWA (respirable fraction)

In 2006 the ACGIH lowered the TLV for Silica, Crystalline: α -Quartz and Cristobalite to 0.025 mg/m³ stating in the *Documentation of the TLV* "Because the time between exposure and signs of fibrosis is characteristically very long, as much as 30 to 40 years, the margin of safety for exposure to crystalline silica at the proposed TLV-TWA is not known precisely. Given the observed association between silicosis and lung cancer, it is recommended that air concentrations be maintained as far below the proposed TLV as prudent practices permit. The recommended TLV-TWA of 0.025 mg/m³, respirable particulate mass, is intended to prevent pulmonary fibrosis that may be a risk factor for lung cancer. An A2, Suspected Human Carcinogen, notation is based on the demonstrated association between lung cancer and the presence of silicosis." The documentation further states "A lack of toxicological and industrial hygiene data does not permit the recommendation of a TLV-STEL. However, it should be noted that high exposures of short duration to freshly fragmented crystalline particles do produce an acute and rapidly progressive form of silicosis. The reader is encouraged to review the section on *Excursion Limits* in the "Introduction to the Chemical Substances" of the current TLVs[®] and BEIs[®] book for guidance and control of excursions above the TLV-TWA, even when the 8-hour TWA is within the recommended limits"

NIOSH has issued its REL of 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m^3) as determined by a full shift sample up to 10-hour working day, 40 hours per week. NIOSH has recommended that OSHA and MSHA adopt the NIOSH REL as the OSHA PEL and the MSHA Exposure Limit. The 1974 NIOSH Criteria for a Recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information. Additionally, NIOSH, In a publication entitled NIOSH Hazard Review Health Effects of Occupational Exposure to Respirable Silica (April 2002), NIOSH stated "...that workers have a significant risk of developing chronic silicosis when they are exposed to respirable crystalline silica over a working lifetime at the current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL), the Mine Safety and Health Administration (MSHA) PEL, or the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL). ...Current sampling and analytical methods used to evaluate occupational exposure to respirable crystalline silica do not meet the accuracy criterion needed to quantify exposures at concentrations below the NIOSH REL of 0.05 mg/m^3 as a time-weighted average (TWA) for up to a 10-hr workday during a 40-hr workweek. Until improved sampling and analytical methods are developed for respirable crystalline silica, NIOSH will continue to recommend an exposure limit of 0.05 mg/m^3 to reduce the risk of developing silicosis, lung cancer, and other adverse health effects. NIOSH also recommends minimizing the risk of illness that remains for workers exposed at the REL by substituting less hazardous materials for crystalline silica when feasible, by using appropriate respiratory protection when source controls cannot keep exposures below the NIOSH REL, and by making medical examinations available to exposed workers."

Crystalline silica exists in several forms, the most common of which are quartz (i.e. this product), trydimite and cristobalite, with quartz being the most common form found in nature. If quartz is heated to more than 870°C , it can change form to trydimite and if quartz is heated to more than 1450°C , it can change form to cristobalite.

Appropriate Engineering Controls: Use local exhaust as required to maintain exposures as far as possible below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice" (current edition). Control of exposure to dust must be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general or local exhaust ventilation and substitution of less toxic materials).

Personal Protective Equipment:

Respiratory Protection: When effective engineering controls are not feasible, or while they are being implemented, appropriate respiratory protection must be used. Use appropriate respiratory protection for respirable particulates based on consideration of airborne workplace concentrations and duration of exposure arising from intended end use. Refer to the most recent government and local standards.

Gloves: Protective gloves recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Equipment/Clothing: As appropriate for the work environment. Dusty clothing should be laundered before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Solid	Appearance:	White powder
Viscosity:	Not applicable	Odor:	None
pH:	Not applicable	Odor Threshold:	Not applicable
Boiling Point/Range:	$4046^\circ\text{F} / 2230^\circ\text{C}$	Vapor Density:	Not applicable
Melting point/freezing point:	$2930^\circ\text{F} / 1610^\circ\text{C}$	Evaporation Rate:	Not applicable
Flammability (solid, gas):	Fully oxidized, will not burn	Partition coefficient (n-octanol/water):	Not applicable
Decomposition Temperature:	Not applicable	Vapor Pressure:	Not applicable
Flash Point:	Not applicable	Relative Density:	2.65
Lower Explosion Limit:	Not applicable	Solubilities:	Insoluble in water

Upper Explosion Limit:	Not applicable	Autoignition Temperature:	Will not burn
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SECTION 10: STABILITY AND REACTIVITY

Reactivity: This product is not reactive under normal conditions of storage and use.

Chemical Stability: This product is stable at normal temperatures.

Possibility of Hazardous Reactions: None known

Conditions to Avoid: None known.

Incompatible Materials: Powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, etc.

Hazardous Decomposition Products: Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Potential Health Effects:

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have serious chronic health effects (see below Repeat Dose Toxicity.)

Skin Contact: No adverse effects expected.

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See Repeat Dose Toxicity below with respect to silicosis, cancer status and other data with possible relevance to human health.

Signs and Symptoms of Exposure: Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz). See Repeat Dose Toxicity below for symptoms of silicosis. The absence of symptoms is not necessarily indicative of safe conditions.

Acute Toxicity Values: Silica: LD50 oral rat >22,500 mg/kg.

Skin Sensitization: Not a skin sensitizer in animals or humans.

Repeated Dose Toxicity:

Silicosis: Excessive 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. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop mycobacterial infections (tuberculous and non-tuberculous) and fungal infections. Inhalation of air with a very high concentration of respirable silica dust can cause the most serious forms of silicosis in a matter of months or a few years. Some epidemiologic studies have concluded that there is significant risk of developing silicosis even at airborne exposure levels that are equal to the recommended NIOSH REL, and ACGIH TLV.

Other Data with Possible Relevance to Human Health:

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) rheumatoid arthritis, systemic lupus, erythematosus, sarcoidosis, chronic bronchitis, chronic obstructive pulmonary disease (COPD), emphysema, chronic kidney disease and end-stage renal disease.

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768, 1997, and see also NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002 (see Section 7 for NIOSH Hazard Review Website).

Carcinogenicity: The International Agency for Research on Cancer has determined that crystalline silica is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 100C, A Review of Human Carcinogens: Arsenic, Fibres, and Dusts (published in 2011) in conjunction with the use of these materials. The National Toxicology Program classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the Twelfth Report on Carcinogens (2011). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Developmental / Reproductive Toxicity: No specific data is available, however, there is no evidence that silica exposure has any effect on reproduction.

Genetic Toxicity: No specific data is available, however, there is no evidence that silica is a germ cell mutagen.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Practically non-toxic to aquatic organisms. Silica: LC50 carp >10,000 mg/L/72 hr.

Persistence and Degradability: Silica is not degradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility in Soil: Not applicable.

Results of PBT and vPvB Assessment: None required.

Other Adverse Effects: None known

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated, dispose in accordance with all applicable local, state/provincial and national/ federal regulations in light of the contamination present. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

SECTION 14: TRANSPORT INFORMATION

Not regulated for transportation under IATA/ICAO, IMDG, US DOT, EU ADR, or Canadian TDG Regulations.
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: None

SECTION 15: REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Chronic Health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: This product contains crystalline silica (respirable) which is known to the State of California to cause cancer.

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from premanufacture notification requirements.

EU Inventory: All of the components of this product are listed on the EINECS inventory or exempt from notification requirements.

EU REACH Status: This substance is exempt from REACH registration.

Canadian Environmental Protection Act: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Canadian WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic Material causing other Toxic Effects)

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

Japan EITI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

Australian National Occupational Health & Safety Commission Status: Hazardous according to the criteria of Australian National Occupational Health & Safety Commission -Harmful (Xn) R48/20 Harmful: Danger of serious damage to health by prolonged exposure by inhalation.

Korea: All of the components of this product are listed on the KECL inventory or exempt from notification requirements.

Philippines: All of the components of this product are listed on the PICCS inventory or exempt from notification requirements.

New Zealand: All of the components of this product are listed on the HSNO inventory or exempt from notification requirements.

China: All of the components of this product are listed on the IECSC inventory or exempt from notification requirements.

Taiwan: All of the components of this product are listed on the CSNN inventory or exempt from notification requirements.

16: OTHER INFORMATION

NFPA Hazard Rating: Health: 1 Fire: 0 Reactivity: 0

HMIS Hazard Rating: Health: * Fire: 0 Reactivity: 0

* Warning - Chronic health effect possible - inhalation of silica dust may cause lung injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See Section 3.

References:

Registry for Toxic Effects of Chemical Substances (RTECS), 2014
Patty's Industrial Hygiene and Toxicology
NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002
NTP Twelfth Report on Carcinogens, 2011
IARC Monograph Volume100C, A Review of Human Carcinogens: Arsenic, Fibres, and Dusts (2011)
Hazardous Substances Data Bank (HSDB), 2014
Documentation of the TLV – Silica, Crystalline: α -Quartz and Cristobalite, American Conference of Governmental Industrial Hygienists, 2006

SDS Date of Preparation/Revision: April 2014

Revision Summary: Conversion to US Hazcom 2012 format – GHS Classification added.

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data the Unimin Corporation believes reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Unimin Corporation, no warranties, expressed or implied, are made and no liability is assumed in connection with any use of this information. Any use of these data and information must be determined by the user to be in accordance with federal, state and local laws and regulations.