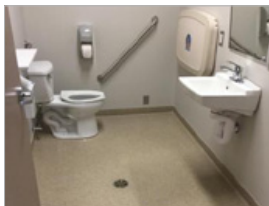
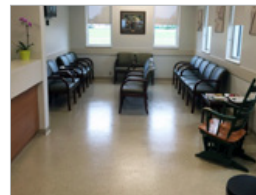


HERMETIC™ 4.8S Urethane Cement Slurry



CSI Division 9: Flooring - Fluid Applied

elite crete systems

Engineered High Performance Surfaces & Flooring

HERMETIC™ 4.8S Urethane Cement slurry

is a three component, thermal shock resistant, urethane slurry (broadcast optional), non-slip flooring system. Available in a variety of colors and engineered to be FDA and USDA acceptable for applications in food manufacturing, packaging and serving facilities.

HERMETIC™ 4.8S Urethane Cement slurry is engineered to withstand steam cleaning on a daily basis, along with it's resistance to bacterial growth makes it ideal for application in most food and beverage manufacturing and serving facilities. Non slip when wet, will withstand severe traffic exposure.

TYPICAL AREAS OF USE

- Meat/Poultry and Dairy Processing
- Breweries, and wineries
- Pharmaceutical Plants
- Commercial Kitchens and Restaurants
- Processing Areas
- Automotive Service Bays
- Cold storage facilities

ADVANTAGES

- Resistant to extreme hot and cold changes in temperature
- Passes ADA recommendations
- Meets or exceeds FDA AND USDA guidelines
- Does not support bacterial growth
- Resistant to high levels of relative humidity in substrates
- Self leveling, water based, & VOC compliant formulation
- CA 01350 indoor air quality compliant
- Does not contain phthalates

SPECIFICATION OVERVIEW

- Name: HERMETIC™ 4.8S Urethane Cement slurry
- Finish: High gloss or satin
- Cured Thickness; 3/16" to 5/8"
- Surface preparation and detailed application see manufacturers instructions
- Manufacturer Elite Crete Systems, Inc. +1-219 465-7671

SAMPLE COLOR CHART



For integral color and decorative quartz options, contact a technical representative.

NOTE: The colors depicted on this technical document may not illustrate the exact color. Contact a technical support representative for a more accurate color sample. Custom colors available upon request.

PHYSICAL PROPERTIES

(@ 73°F / 23°C, 7 day ambient cure as a coating)

Mix Ratio: Pre-Engineered 3 part unit

Gel Time: 14 minutes

Consistency: Gage rake slurry

PROPERTY	TEST	RESULT
VOC Content	N/A	0 g/l
Shore D Hardness	ASTM D-2240	80-85
Compressive Strength	ASTM C-579	12,800 psi
Tensile Strength	ASTM D-638	4,400 psi
Flexural Strength	ASTM D-790	6,300 psi
Adhesion	ASTM D-4541	>400 (100% concrete failure)
Impact Resistance	ASTM D-2794	Pass
Abrasion Resistance *	ASTM D-4060	2 mg loss
Thermal Shock Resistance	MIL F-52505	Pass (230F) Force Hot Steam
Flammability	ASTM E-648	Class 1
Indoor Air Quality	CA-01350	Compliant
Coefficient of Friction	ASTM D-2047	0.9 (Passes ADA recommendation)

* CS-17 Wheel, 1 KG load, 1,000 cycles



elite crete systems

Elite Crete Systems, Inc.

1151 Transport Drive
Valparaiso, Indiana 46383

Phone: +1.219.465.7671 Fax: +1.219.531.0898

Toll Free: 888-323-4445

Email: info@elitecrete.com

www.elitecrete.com

The information herein is general information to assist our customers in determining whether our products are suitable for their specific applications. Our products are intended for sale to commercial and industrial customers. We require that customers should inspect and test our products before use to satisfy themselves as to the content and suitability for the applications they intend to use our products for. Nothing herein shall constitute any warranty expressed or implied, including any warranty of merchantability or fitness for a particular purpose, nor is replacement of our materials and in no event shall we be liable for incidental or consequential damages.

TD.702 – TECHNICAL DATA: HERMETIC™ 4.8S Urethane Cement Slurry

Revised: 7.25.17

Product Description:

Elite Crete Hermetic 4.8S Urethane slurry is a three component Urethane slurry that is applied by screed rake to concrete floors and broadcast to excess with 50 mesh dry silica sand, color quartz sand or aluminum oxide to create a non-slip floor for wet areas. Unaffected by forced hot steam up to 230° F and will cure in cold damp conditions. Fast setting and resistant to a variety of chemicals (see *chemical resistance chart on this data sheet*). *Elite Crete 3/16" Urethane slurry* is Seamless, replacing the need for costly tiles with failed joints where bacteria can grow. Bonds to slightly damp concrete. Slurry broadcast coat and one top coat will yield a 1/4"-5/16" thickness. For heavy thermal shock attack areas a 5/16" thickness is recommended as a minimum. For Freezer flooring applications an accelerator is available to assist in curing speed at 0°F temperatures.

USES:

All food manufacturing & processing facilities
 Dairies, Breweries, Wineries, Meat and Poultry plants
 Commercial kitchens
 Bottling sanitizing & wash areas
 Meets USDA, FDA, and CFIA standards
 Loading docks,
 Chemical processing plants
 Beverage plants
 Warehouse and storage facilities
 Cold rooms, freezers

FEATURES:

Excellent chemical resistance
 Water based, VOC compliant
 Passes ADA recommendations
 Fast curing, one step installation
 Pharmaceutical plants
 Will not support bacterial growth
 Resistant to forced hot steam over 230 F
 Can be applied down to -0 F (no moisture/ice in or on substrate)
 Zero VOC
 Osmotic pressure resistant up to 20 lbs. (Test for suitability)
 No odor
 Easy Clean up with Elite Crete EXIT
 CA 01350 indoor air quality compliant
 Does not contain phthalates

Physical Properties

Property	Test Standard	Result
Mix Ratio:		pre-engineered 3 component unit
Application Temperatures:		0°F to maximum of 85°F
Gel Time: 1 GALLON @ 70 F		14 minutes
Colors:		5 colors available
Water Absorption	ASTM D 570	0.03%
Compressive Strength	ASTM C-579	12,800 psi
Shore D hardness	ASTM D-2240	80-85
Adhesion	ASTM D-4541	>400 (100% concrete failure)
Tensile strength	ASTM D-638	4,400 psi
Flexural Strength	ASTM D-790	6,300 psi
Impact resistance	ASTM D-2794	PASS
Abrasion Resistance	ASTM D-4060	2 mg lost
Thermal Shock Resistance	MIL F-52505	no cracking or loss of adhesion
Service temperature		-100 – 230F (<u>forced</u> hot steam)
VOC Content		0 g/l
Coefficient of friction		0.9 (passes ADA recommendations)
Standard slip-resistant	ASTM D-2047	Compliant
Indoor Air Quality	CA 01350	Class 1
Flammability	ASTM E-648	

Chemical Resistance

1 = no effect with clean up and wash down within 48 hours,
 2 = clean up and wash down within 24 hours,
 3 = clean up and wash down within 1 hour
 4 = Not recommended

Acetone	3
Acetic Acid 1-10%	2
Acetic Acid 11-25%	3
Alcohol: (beer, wine, whisky, white spirits)	2
Ammonium Chloride 1-40%	2
Ammonium Hydroxide 1-10%	1
Ammonium Hydroxide 11-50%	2
Ammonium Sulphate 1-10%	1
Ammonium Hydroxide 11-50%	2



1151 Transport Drive, Valparaiso, IN 46383
Toll Free 888.323.4445 • P 219.465.7671
F 219.531.0898 • www.elitecrete.com

Brine (saturated)	1
Citric Acid 35%	1
Citric Acid 50%	2
Diesel Fuel	1
Diesel Oil	1
Ethylene Glycol	1
Fats, Oils Sugars	1
Formic Acid 1-20%	1
Formic Acid 21-50%	2
Gasoline, Jet Fuels (JP-4, 6), kerosene	1
Grape Juice	1
Hydraulic Oils	1
Hydrochloric Acid 1-10%	1
Hydrochloric Acid 11-20%	2
Hydrochloric Acid 21-37%	3
Hydrogen Peroxide 1-20%	1
Isopropyl Alcohol	1
Lactic Acid 1-10% (milk)	1
Lactic Acid 11-20%	2
Methyl ethyl ketone	3
Mineral Oil	1
Motor Oil	1
Nitric Acid 1-5%	3
Nitric Acid 6% -70%	4
Potassium Hydroxide 50%	1
Sulfuric Acid 1-5%	2
Turpentine	1
Toluene	3
Xylene	3

Some chemicals may cause discoloration in the flooring without affecting the performance or physical properties of the system. Test for suitability before use.

Packaging and Storage:

Elite Crete 3/16" urethane slurry is supplied in pre-measured units:

Part A 1.10 gallon (4.21 Ltr.) in 1 gallon pail

Part B 0.692 gallon(2.63 Ltr.) in an 1 gallon pail

Part C 40 lb. plastic lined bag of cement slurry aggregate

- This product has been engineered to meet demanding standards,
- Only mix whole complete units to assure the performance criteria in this data sheet.
- Do not use partial units or try to break down the unit as the performance will be compromised.
- Do not allow this product to freeze.
- Store in a dry environment between 50-85 F.
- All Elite Crete Products are shipped with a lot number on the label. The first two digits indicate the year, the second two digits indicate the day, and the last two digits indicate the month. Shelf Life is 6 months from the date on the label in the original unopened containers.

Coverages: 1 Unit coverage

22 square feet at 1/4" thickness

12.5 square feet at 3/8" thickness

Cure Schedule: (70 F)

Working Time: 14 minutes @70F (less at higher temperatures)
Recoat, Foot Traffic: 4-12 hours (depending upon substrate temperature)
Wheeled Traffic: 24 hours
Thermal shock resistance 48 hours
Full Cure: 72 hours
Working time at (0°F) with accelerator added to the mix



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Working time: 11 minutes (In 0°F ambient temperature)

Top coat: 24 hours

Full traffic 48 hours

Colors:

Stocked colors:

- light gray
- medium gray
- dark gray
- tan
- red

Other colors available on request with two week lead time

Preparation:

Remove all contaminants and weak laitance in the concrete with appropriate degreasers and shot blasting for the final profile or use other mechanical means, washing the surface or sanding is not acceptable. Key all termination points and around all drains. Honor all joints in the concrete slab. Concrete must be at least 14 days old. A working vapor barrier on all on grade substrates is recommended before application of Elite Crete 3/16" Urethane Slurry

Mixing & Application:

APPLICATION TEMPERATURES 0°F TO MAXIMUM OF 85°F IN TEMPERATURES LOWER OR HIGHER THAN RECOMMENDED, CURE SPEED AND BLISTERING MAY OCCUR IN THE COATING.

Condition parts A, B C to room Temperature between 60°F - 75°F. (Using a mud Paddle and VARIABLE SPEED ½ HP electric drill in a suitable size container pour in part A and 1 Pint of Water Borne Pigment dispersion and mix for 1 minute, Immediately add part B and begin to mix while adding part C aggregate. **Mix a minimum of two minutes**, or until completely blended. **Failure to mix for the full two minutes may cause blisters in the slurry mix if the cement and lime are not completely disbursed in the liquid.** THROUGH MIXING IS MANDATORY TO ENSURE THE PRODUCT FLOWS AND LEVELS EASILY, IF THERE IS LUMPS IN THE SLURRY THE PRODUCT WILL NOT SQUEEGEE OUT UNIFORMLY.

IMMEDIATELY pour the mixed slurry onto the prepared substrate and spread with a gage rake or drop box to desired thickness (3/16") is the minimum thickness the slurry can be applied. After spreading fill in any low spots or holidays, and back roll with a porcupine roller in two different directions. As soon as the slurry is back rolled, broadcast the desired aggregate to excess and allow to cure, **@70F the open time to broadcast the aggregate is 12-14 minutes. Do not delay, as soon as the part B is added to the mixing pail the working time begins.**

Depending upon the ambient and substrate temperature in 8-12 hours check to see if the slurry has set up enough to sweep up excess silica sand and vacuum loose sand.

Top Coat

Apply PT-4 fast set top coat in the same color as the slurry base color.

If this product is exposed to direct sunlight Apply AUS-V top coat in the same color as the base slurry color.

Clean up:

Clean tools with Elite Crete Exit which is nonhazardous. Xylene may also be used on tools to clean them however which ever cleaner is selected, clean the tools before the mortar has hardened. Elite Crete Exit may be used to clean the mortar mixer as well by pouring in Exit and running the mixer for 1 minute, then stop the mixer and wipe with a clean rag. After cleaning, drain the cleaner fluid and wipe the mixer down so no residue is present in the mixer. Clean the mixing blades often during the project.

Limitations:

Exposure to ultraviolet light will change the color of Elite Crete Urethane mortar. Sunlight and Metal Halide lighting will cause yellowing without affecting the performance. As an option a coat of AUS-V top coat can be applied to prevent ambering. Contact your local Elite Crete manager for Consultation.



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Toll Free 888.323.4445 • P 219.465.7671
F 219.531.0898 • www.elitecrete.com

MIXING AND APPLICATION IN 0°F TEMPERATURE APPLICATIONS

NOTE: do not apply this product in the presence of frozen water in the substrate

Mixing & Application:

Condition Part A and Part B to (70-73°F) condition part C to (0°F)

After part A, part B are properly conditioned between 60°F-75°F Condition part C in the freezer for at least 2 hours or longer., bring in part A and Part B to the freezer and begin mixing sequence as follows: Using a mud Paddle and VARIABLE SPEED ½ HP electric drill in a suitable size container pour in part A and accelerator and mix for 1 minute. Add part B (working time begins) and mix for 15 seconds and begin to immediately add the conditioned part C mortar mix. **Mix a minimum of two minutes**, or until completely blended. **Failure to mix for the full two minutes may cause blisters in the slurry mix if the cement and lime are not completely disbursed in the liquid.** THROUGH MIXING IS MANDATORY TO ENSURE THE PRODUCT FLOWS AND LEVELS EASILY, IF THERE IS LUMPS IN THE SLURRY THE PRODUCT WILL NOT SQUEEGEE OUT UNIFORMLY.

IMMEDIATELY pour the mixed slurry onto the prepared substrate and spread with a gage rake or drop box to desired thickness (3/16") is the minimum thickness the slurry can be applied. After spreading fill in any low spots or holidays, and back roll with a porcupine roller in two different directions. If the freezer will be dry, no broadcast will be necessary.

Do not delay, as soon as the part B is added to the mixing pail the working time begins.

If this product is exposed to direct sunlight discoloration could occur but will not affect performance

LIMITED WARRANTY

Neither seller nor manufacturer has any knowledge or control concerning the purchaser's use of this system/product. The seller or manufacturer with respect to the results of any use of the product makes no express warranty. NO IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO AN IMPLIED WARRANTY OF MERCHANTABILITY, OR AN IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE ARE MADE WITH RESPECT TO THIS SYSTEM/PRODUCT. Neither seller nor manufacturer nor representative of such system/ product assumes any liability for personal injury or loss from the use of this product. In the event such product is defective, the buyer's exclusive and only remedy shall be as follows: Seller or manufacturer shall, upon written request of the buyer, replace any quantity of the system/product which is proven to be defective or shall at its option refund the purchase price for the system/product upon the return of proven defective system/ product.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: E100-VB5™ Part A

1.2 Article No.: E100-VB5™ Part A

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive,
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS: Not Classified

Classification according to Directive 1999/45/EC: [Xn] Harmful, [N] Dangerous to the Environment

Information concerning particular hazards for human and environment:

Product Description: This product is a water –white – pale straw colored liquid with a mild epoxy odor.

Health Hazards: Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization

Flammability Hazards: This product is Flammable above its flash point of 340°F (170°C)**Reactivity Hazards:** None known.**Environmental Hazards:** The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.**Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.**Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07



GHS09

Signal Word: Warning**Hazard-determining components of labeling:** Bisphenol A based Epoxy Resin**Hazard statements**

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

Precautionary statements

P264: Wash hands thoroughly after handling
 P270: Do not eat, drink or smoke when using this product
 P271: Use only in well-ventilated area.
 P273: Avoid release to the environment
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
 P302+P352: IF ON SKIN: Wash with plenty of soap and water.
 P391: Collect spillage.
 P403+P235: Store in a well-ventilated place. Keep cool.
 P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

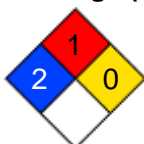
Hazard description:

Canadian WHMIS Classification: This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

WHMIS-symbols:



NFPA ratings (scale 0 - 4)



Health = 2
 Fire = 1
 Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health	2
Fire	1
Reactivity	0

Health = 2
 Fire = 1
 Reactivity = 0

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 25085-99-8 EINECS: Not Listed Index Number:	Bisphenol A based Epoxy Resin HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant RISK PHRASES: R21, R34, R43, R52/53	< -91%
CAS: 68609-97-2 EINECS: 271-846-8 Index Number;	Alkyl C-12-C-14 Glycidyl Ether Skin Irritant 1, Skin Sens. 1, Muta. 2; Aquatic Chronic 2; R 43; Xi 38; R 38, R43.	< 9%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

Target Organs: **Acute:** Eye, Skin **Chronic:** Skin

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

This product is a flammable liquid above flash point shown.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Personnel should be trained for spill response operations.

6.2 Environmental precautions:

All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up:

Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

7.3 Specific end use(s): No information

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Water – clear to slight amber

Odor:

Mild epoxy odor

Odor threshold:

Not Available

pH-value:

Not Available

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

>200°C

Flash point:

>392°F (>200°C)

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

This product is a flammable liquid above flash point shown above.

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 25 °C:

<0.1 mmHg

Density at 20°C:

9.13 lbs. per gallon, specific gravity 1.10

Relative density:

No data available

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Not Available

Specific Gravity 20°C: (Water = 1):

Not Available

Viscosity:

Dynamic:

No data available

Kinematic:

No data available

Solvent content:

Organic solvents:

No data available

VOC (EC)

No data available

9.2 Other information

No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, hydrocarbons and soot.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: Contact with incompatible materials

10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

10.6 Hazardous decomposition products: Will not occur

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

Acute Dermal	LD 50	>20,000 mg/kg	Rabbit
Acute Oral	LD 50	>5,000 mg/kg	Rat

Primary irritant effect: Contact with this product can be irritating to exposed skin and eyes.

Sensitization: This product is considered a skin sensitizer.

Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No evidence is currently available on this product's effects on aquatic life.

Component Data: CAS# 25085-99-8

Fathead Minnow LC50 3 mg/l 96 h

Toxicity to daphnia magna EC50 1.4 -1.7 mg/l 24 h

Bacteria: IC50 >42.6 mg/l 18 h

Biodegradation: 28 days 12% OECD

Bioaccumulation: Not readily biodegradable

12.2 Persistence and degradability: No data available

12.3 Bio accumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxicological effects:

Remark:

Additional ecological information: No data available

General notes: No specific data is available for this product, however this product is expected to be readily biodegradable

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: None Listed

EU WASTE CODE: Not Listed

14 Transport information

14.1 UN-Number

DOT:CAN: NOT REGULATED

ADN; ADR: IMDG: IATA: UN 3082

14.2 UN proper shipping name

DOT:CAN; NOT REGULATED

ADR: ADN: IMDG: IATA: Environmentally hazardous substance Liquid, N.O.S.
(Bisphenol A, epoxy resin)

14.3 Transport hazard class(es)

DOT; CAN:



ADN: ADR: IMDG: IATA



14.4 Packing group

DOT:CAN: NOT REGULATED

ADR: ADN: IMDG: IATA: PG III

14.5 Environmental hazards:

Product contains environmentally hazardous substances: reaction Products of Epichlorohydrin and Bisphenol A)

Marine pollutant:

YES

Special Markings (ADR):



Notes: marine pollutant (IMDG code 2.9.3). For air transport, see special provision A97 (ICAO/IATA).
For surface shipments in the USA: Not Regulated

14.6 Special precautions for user

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

Danger code (Kemler):	No data available
EMS Number:	No data available
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	No data available
Transport/Additional information	
ADR	
Tunnel restriction code	No data available
UN "Model Regulation":	No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

16 Other information

Relevant phrases:

- H312: Harmful in contact with skin
- H317: May cause an allergic skin reaction
- H412: Harmful to aquatic life with long lasting effects

Precautionary statements

- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only in well-ventilated area.
- P273: Avoid release to the environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

-
- R21: Harmful in contact with skin
 - R34: Causes burns.
 - R43: May cause sensitization by skin contact
 - R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Abbreviations and acronyms:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation.
- IATA: International Air Transport Association.
- ACGIH: American Conference of Governmental Industrial Hygienists.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- ELINCS: European List of Notified Chemical Substances.
- CAS: Chemical Abstracts Service (division of the American Chemical Society).
- NFPA: National Fire Protection Association (USA).
- HMIS: Hazardous Materials Identification System (USA).
- LC50: Lethal concentration, 50 percent.
- LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B**1 Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade Name: E100-VB5™ Part B

1.2 Article No.: E100-VB5™ Part B**1.3 Details of the supplier of the Safety Data Sheet Manufacturer:**

Elite Crete Systems
1151 Transport Drive,
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Oral Toxicity Category 4
Serious eye damage category 1

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS05

GHS07

Signal word: Danger

Hazard Statements:

H302: Harmful if swallowed

H318: Causes serious eye damage

Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and Local regulations.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

Hazards no classified: Harmful if swallowed. Severe eye irritant. Moderate respiratory irritant. Moderate skin irritant. Risk of serious damage to eyes.

Hazard description:

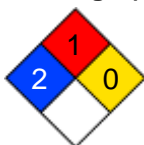
Canadian WHMIS Classification:

non corrosive, non hazardous

WHMIS-symbols:

None required

NFPA ratings (scale 0 – 4)



Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 – 4)

Health	2
Fire	1
Reactivity	0

Health = 2
Fire = 1
Reactivity = 0

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 100-51-6 EINECS: 202-859-9	Benzyl Alcohol GHS Classification: Not hazardous	30-%
CAS: priority EINECS:	Manic Base Adduct GHS Classification Not Hazardous	70%

Additional information: WHMIS Ingredient Disclosure List.

WHMIS Trade Secret Registry Number: 6160 Grant date 2/14/2007

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation develops.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Hazards: Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gas. Burning produces toxic and noxious fumes. Down wind personnel must be evacuated.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations.

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

. Do not store near acids.. keep containers tightly closed in a cool dry and well ventilated place.

7.3 Specific end use(s): keep from freezing.

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Safety goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Hazy to amber to brown liquid

Odor:

Slight ammonia

Odor threshold:

Not Available

pH-value:

11.2

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

212°F (100°C)

Flash point:

N/A

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

N/A

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 20 °C:

No data available

Density at 20°C:

67.422 lb/ft³ (1.08g/cm³) @ 70°F (21°C)

Relative density:

8.66 pounds per gallon @ 25°C

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Not Available

Specific Gravity 20oC: (Water = 1):

Not Available

Viscosity:

400 cps (400mPa) @ 77°F

Solvent content:

Organic solvents:

0

VOC (EC)

0.00%

9.2 Other information

No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, NO_x, amines, ammonia and others.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: no data

10.5 Incompatible materials: organic acids, citric acid, acetic acid, etc

10.6 Hazardous decomposition products: Nitric acid, Ammonia, Nitrogen oxides (NO_x), Nitrogen oxide can react with water vapors to form corrosive nitric acid.

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

Acute Dermal	LD 50	>2,000 mg/kg	Rabbit
Acute Oral	LD 50	>2,000 mg/kg	Rat

Primary irritant effect: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

Sensitization: This product is considered a skin sensitizer.

Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

Reproductive toxicity information: No information concerning the effects of this product and its components on the human reproduction system.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No data available

12.2 Persistence and degradability: No data available

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxical effects:

Remark:

Additional ecological information: No data available

General notes:

Component Information:

no other information available

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: D002

EU WASTE CODE: To Be Established

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

14 Transport information

14.1 UN-Number

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.2 UN proper shipping name

ADR: DOT: CAN: ADR: ADN: IMDG: NOT REGULATED
IATA:

14.3 Transport hazard class(es)

DOT: CAN: ADR: ADN: IMDG: IATA:

Class:

NOT REGULATED

Label:

14.4 Packing group

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.5 Environmental hazards:

Marine pollutant:

NOT REGULATED

14.6 Special precautions for user

Danger code (Kemler):
EMS Number:

No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

Transport/Additional information

ADR

Limited Quantities (LQ)

Excepted Quantities (EQ)

No data available

Transport Category:

Tunnel restriction code:

UN "Model Regulation":

No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

WHMIS Ingredient Disclosure List.

WHIMS Trade Secrete Registry Number(s) 6160 Grant date 2/14/2007

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Hazard Statements:

H302: Harmful if swallowed

H318: Causes serious eye damage

Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: E100-VR1™ Part A

1.2 Article No.: E100-VR1™ Part A

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS: Not Classified

Classification according to Directive 1999/45/EC: [Xn] Harmful, [N] Dangerous to the Environment

Information concerning particular hazards for human and environment:

Product Description: This product is a water –white – pale straw colored liquid with a mild epoxy odor.**Health Hazards:** Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization**Flammability Hazards:** This product is Flammable above its flash point of 340°F (170°C)**Reactivity Hazards:** None known.**Environmental Hazards:** The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.**Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07



GHS09

Signal Word: Warning**Hazard-determining components of labeling:** Bisphenol A based Epoxy Resin

Hazard statements

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

Precautionary statements

P264: Wash hands thoroughly after handling
 P270: Do not eat, drink or smoke when using this product
 P271: Use only in well-ventilated area.
 P273: Avoid release to the environment
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
 P302+P352: IF ON SKIN: Wash with plenty of soap and water.
 P391: Collect spillage.
 P403+P235: Store in a well-ventilated place. Keep cool.
 P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

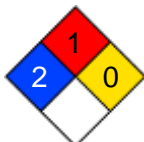
Hazard description:

Canadian WHMIS Classification: This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

WHMIS-symbols:



NFPA ratings (scale 0 - 4)



Health = 2
 Fire = 1
 Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health	2
Fire	1
Reactivity	0

Health = 2
 Fire = 1
 Reactivity = 0

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 25085-99-8 EINECS: Not Listed Index Number:	Bisphenol A based Epoxy Resin HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant RISK PHRASES: R21, R34, R43, R52/53	< 85-92%
CAS106-89-8 EINECS: 203-439-8 Index Number; 603-026-00-6	1-CHLORO-2,3-EPOXYPROPANE Skin Irritant 1B H314, Skin Sens. 1, H317 Muta. 2; T carc. Cat.2 R45-23/24/25 C R 34 Xi;; R 10, R43. Acute tox. 3, H350, H 331	< 8-15%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

Target Organs: **Acute:** Eye, Skin **Chronic:** Skin

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

This product is a flammable liquid above flash point shown.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Personnel should be trained for spill response operations.

6.2 Environmental precautions:

All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up:

Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

7.3 Specific end use(s): No information

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Water – clear to slight amber

Odor:

Mild epoxy odor

Odor threshold:

Not Available

pH-value:

Not Available

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

>200°C

Flash point:

>392°F (>200°C)

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

This product is a flammable liquid above flash point shown above.

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 25 °C:

<0.1 mmHg

Density at 20°C:

9.50 lbs. per gallon, specific gravity 1.14

Relative density:

No data available

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Not Available

Specific Gravity 20°C: (Water = 1):

Not Available

Viscosity:

Dynamic:

No data available

Kinematic:

No data available

Solvent content:

Organic solvents:

No data available

VOC (EC)

No data available

9.2 Other information

No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, hydrocarbons and soot.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: Contact with incompatible materials

10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

10.6 Hazardous decomposition products: Will not occur

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

Acute Dermal	LD 50	>20,000 mg/kg	Rabbit
Acute Oral	LD 50	>5,000 mg/kg	Rat

Primary irritant effect: Contact with this product can be irritating to exposed skin and eyes.

Sensitization: This product is considered a skin sensitizer.

Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No evidence is currently available on this product's effects on aquatic life.

Component Data: CAS# 25085-99-8

Fathead Minnow LC50 3 mg/l 96 h

Toxicity to daphnia magna EC50 1.4 -1.7 mg/l 24 h

Bacteria: IC50 >42.6 mg/l 18 h

Biodegradation: 28 days 12% OECD

Bioaccumulation: Not readily biodegradable

12.2 Persistence and degradability: No data available

12.3 Bio accumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxicological effects:

Remark:

Additional ecological information: No data available

General notes: No specific data is available for this product, however this product is expected to be readily biodegradable

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: None Listed

EU WASTE CODE: Not Listed

14 Transport information

14.1 UN-Number

DOT: CAN: NOT REGULATED

ADR: ADN: IMDG: IATA: UN 3082

14.2 UN proper shipping name

DOT: CAN: NOT REGULATED

ADR: ADN: IMDG: IATA: Environmentally hazardous Substance Liquid, N.O.S.
(Bisphenol A, epoxy resin)

14.3 Transport hazard class(es)

DOT: CAN:



ADR: ADN: IMDG: IATA:



14.4 Packing group

DOT: CAN: NOT REGULATED

ADR: ADN: IMDG: IATA: PG III

14.5 Environmental hazards:

Product contains environmentally hazardous substances:
reaction Products of Epichlorohydrin and Bisphenol A)

Marine pollutant:

YES

Special markings (ADR):



Notes: marine pollutant (IMDG code 2.9.3) For air transport, see special provision A97 (ICAO/IATA): **For shipments within the USA: Not Regulated.**

14.6 Special precautions for user

Danger code (Kemler): not applicable

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

EMS Number:

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

Transport/Additional information none

ADR Tunnel restriction code No data available

UN "Model Regulation": No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:
None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):
All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):
None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):
None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part A

16 Other information

Relevant phrases:

- H312: Harmful in contact with skin
- H317: May cause an allergic skin reaction
- H412: Harmful to aquatic life with long lasting effects

Precautionary statements

- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only in well-ventilated area.
- P273: Avoid release to the environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

-
- R21: Harmful in contact with skin
 - R34: Causes burns.
 - R43: May cause sensitization by skin contact
 - R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Abbreviations and acronyms:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation.
- IATA: International Air Transport Association.
- ACGIH: American Conference of Governmental Industrial Hygienists.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- ELINCS: European List of Notified Chemical Substances.
- CAS: Chemical Abstracts Service (division of the American Chemical Society).
- NFPA: National Fire Protection Association (USA).
- HMIS: Hazardous Materials Identification System (USA).
- LC50: Lethal concentration, 50 percent.
- LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: E100-VR1™ Part B

1.2 Article No.: E100-VR1™ Part B

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS:

Reproductive Toxicity Category 2, H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Acute Inhalation Toxicity Category 4, H322 Harmful if inhaled.

Acute Oral Toxicity Category 4, H302 Harmful if swallowed.

Skin Sensitization Category 1, H317 May cause allergic skin reaction

Skin Corrosion/Irritation Category 1B, H314 Causes severe skin burns and eye damage.

Acute Aquatic Toxicity Category 1, H400 Very Toxic to Aquatic life.

Chronic Aquatic Toxicity Category 1, H410 Very toxic to aquatic life with long lasting effects.

Classification according to Directive 1999/45/EC:



C; Corrosive
R34: causes Burns



Xn; harmful
Xi; Sensitizing

R43; May cause skin sensitization by skin contact.



N: Dangerous for the environment.

R50/53; Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:

Product Description: This product is a pale straw – yellow colored liquid with mild ammonal odor.

Health Hazards: Harmful if swallowed; Corrosive, CNS depressant; Severe Eye Irritant, Severe Respiratory Irritant, May cause skin sensitization

Flammability Hazards: Not Applicable

Reactivity Hazards: None known.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS05



GHS07



GHS08



GHS09

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

Signal Word: Danger

Hazard-determining components of labeling:

Contains m-phenylenebis (methylamine)

4-nonylphenol, branched

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Hazard statements:

H302+H332: harmful if swallowed or if inhaled.

H314: Causes severe skin burns and eye damage

H317: May cause allergic skin reaction.

H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260: Do not breath dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only in well ventilated area.

P273: Avoid release to the Environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337+P313: If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description:

Canadian WHMIS Classification:

D2B – Toxic material causing other toxic effects.

E – Corrosive material

WHMIS-symbols:



NFPA ratings (scale 0 – 4)



Health = 3

Fire = 1

Reactivity = 0

HMIS-ratings (scale 0 – 4)

Health	3
Fire	1
Reactivity	0

Health = 3

Fire = 1

Reactivity = 0

2.3 Other hazards

No known

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 100-51-6 EINECS: 202-859-9	Benzyl Alcohol HAZARD CLASSIFICATION: RISK PHRASES:	30-50%
CAS: 2855-13-2 EINECS: 220-666-8	Isophorondiamine HAZARD CLASSIFICATION: [C] Corrosive RISK PHRASES:	15– 25%
CAS: 2579-20-6 EINECS: 219-941-5	1,3,Cyclohexanedimethanamine HAZARD CLASSIFICATION: [Xn] Harmful RISK PHRASES: R37, R43	12 – 30%
CAS: 98-54-4 EINECS: 202-679-0	4-Tert-Butylphenol HAZARD CLASSIFICATION: Repr Cat 3, [Xn] Harmful, [C] Corrosive, [N] RISK PHRASES: R22, R62, R63, R34, R50/53	5 – 15%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention If irritation develops.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material is harmful if inhaled and may cause delayed lung injury. This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Target Organs:

Acute: Eye, Respiratory System, Skin

Chronic: Skin

Hazards: Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

This product is flammable above flash point indicated above.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations.

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store between 5° and 300C and avoid contact with skin and eyes. Do not store near acids. Ground all transfer equipment. Hold bulk storage under a nitrogen blanket. This product should not come in contact with copper or copper-bearing alloys. Containers of this product must be properly labeled. Nitrogen purging of containers is ideal and good practice.

7.3 Specific end use(s): No information

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Safety goggles

Body Protection:



Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Clear – pale straw

Odor:

Slight amine

Odor threshold:

Not Available

pH-value:

11.5-12

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

No data available

Flash point:

>392°F (>200°C)

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

This product is a flammable liquid above flash point shown above.

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 20 °C:

<0.1 mmHg @ 25°C

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

Density at 20°C:	1.04
Relative density:	8.66pounds per gallon @ 25°C
Vapor density:	No data available
Evaporation rate:	No data available

Solubility in / Miscibility with Water:	Not Available
Specific Gravity 20oC: (Water = 1):	Not Available

Viscosity:	
Dynamic:	No data available
Kinematic:	No data available

Solvent content:	
Organic solvents:	No data available
VOC (EC)	No data available
9.2 Other information	No data available

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, NO_x, amines, ammonia and others.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: Contact with incompatible materials

10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

10.6 Hazardous decomposition products: Will not occur

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

LD/LC50 values relevant for classification:

1477-55-0 m-phenylenebis(methylamine)

Oral LD50 1040 mg/kg (rat)

Inhalative LC504h 2,4 mg/l (rat)

2855-13-2 3-aminomethyl-3,5 5-trimethylcyclohexylamine

Oral LD50 1030 mg/kg (rat)

Primary irritant effect: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

Sensitization: This product is considered a skin sensitizer. Also can be a sensitizer thru inhalation by prolonged exposure

Additional toxicological information:

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

The product shows the following dangers according to the calculation method of the general EU Classification guidelines for preparations as issued in the latest version:

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on the mouth and throat and to the danger of perforation of the esophagus and stomach.

Sensitization: Sensitization is possible by inhalation and/or dermal contact.

Repeated dose toxicity: Repeated exposures may result in skin and /or respiratory sensitivity.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No data available

12.2 Persistence and degradability: No data available

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxicological effects:

Remark:

Additional ecological information: No data available

General notes:

Component Information:

nonyl phenol CAS# 25154-52-3

Acute Fish Toxicity 96 hr LC50 0.13 mg/l fathead minnow (*Pimephales promelas*)

48 hr EC50 0.19 mg/l *Daphnia Magna*

Harmful to aquatic organisms. May cause long term damage to environment

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: D002

EU WASTE CODE: To Be Established

14 Transport information

14.1 UN-Number

DOT: CAN: ADR: ADN: IMDG: UN2735

IATA:

14.2 UN proper shipping name

DOT: CAN: ADN: IMDG: IATA: Amines, Liquid, Corrosive, N.O.S. Contains : (ISOPHRONEDIAMINE)

ADR: 2735 Amines, Liquid, Corrosive, N.O.S. Contains: (ISOPHRONEDIAMINE)

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

14.3 Transport hazard class(es)

DOT: CAN :IMDG; IATA: ADN:

Class:

Class 8 Corrosive substances

Label:



ADR:

Class:

Class 8 (C7) Corrosive substances

Label



14.4 Packing group

DOT, ADR, IMDG, IATA: TGD

PG II

14.5 Environmental hazards:

Marine pollutant:

YES

Special marking (ADR)



14.6 Special precautions for user

Danger code (Kemler):

Warning corrosive substances

EMS Number:

80

Segregation groups:

F-A,S-B

Alkalis

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not applicable

Transport/Additional information

ADR

Limited Quantities (LQ)

Excepted Quantities (EQ)

5L

Code E1

Maximum net quantity per inner packaging 30ml

Maximum net quantity per outer packaging 1000 ml

Transport Category:

Tunnel restriction code:

3

E

UN "Model Regulation":

UN2735 Amines, Liquid, Corrosive, N.O.S. (Contains (ISOPHRONEDIAMINE))

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males or females: None of the ingredients listed

Chemicals known to cause development toxicity:

None of the ingredients listed

Carcinogenic categories:

EPA, IARC, TLV, NIOSH-Ca, OSHA-Ca, :

None of the ingredients Listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients listed.

Canadian Ingredient Disclosure list (limit 1%)

1477-55-0 m-phenylenebis(methylamine)

2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/21/2014

Revision: 10/21/2014

Trade Name: E100-VR1™ - Clear UV Resistant Epoxy – Part B

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Hazard statements:

- H361: Suspected of damaging fertility or the unborn child.
- H302 Harmful if swallowed.
- H332: Harmful inhaled.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H400: Vary toxic to aquatic life.
- H401: Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P260: Do not breath dust/fume/gas/mist/vapors/spray
- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only in well ventilated area.
- P273: Avoid release to the Environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Abbreviations and acronyms:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation.
- IATA: International Air Transport Association.
- ACGIH: American Conference of Governmental Industrial Hygienists.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- ELINCS: European List of Notified Chemical Substances.
- CAS: Chemical Abstracts Service (division of the American Chemical Society).
- NFPA: National Fire Protection Association (USA).
- HMIS: Hazardous Materials Identification System (USA).
- LC50: Lethal concentration, 50 percent.
- LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: AUS-V™ - Part A

1.2 Article No.: AUS-V™ - Part A

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS:

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H361fd, H411.

The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU: H361.



GHS07 exclamation mark

Acute Tox. 2; H302: Harmful if swallowed.

Skin Sensitization 1; H317: May cause an allergic skin reaction. STOT SE 3; H335: May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Xn; Harmful. R22-62: Harmful if swallowed. Possible risk of impaired fertility. Xi; Sensitizing.

Xi; Irritant.. R22-48: Harmful if swallowed.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07

Signal Word: Warning

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

Hazard-determining components of labelling:

N/A

Hazard statements

H312: Harmful in contact with skin

Precautionary statements

P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only in well ventilated area.

P273: Avoid release to the environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337+P313: If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable.

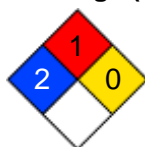
Hazard description:

Canadian WHMIS Classification: This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

WHMIS-symbols:



NFPA ratings (scale 0 - 4)



Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health	2
Fire	1
Reactivity	0

Health = 2
Fire = 1
Reactivity = 0

2.3 Other hazards

No known

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 5131-66-8 EINECS: Not Listed Index Number:	Propylene glycol n-Butyl ether HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant RISK PHRASES: R21, R34, R43, R52/53	< 95-99%
CAS: 102-71-6	Triethanolamine Skin Irritant 1, Skin Sens. 1, Muta. 2; Aquatic Chronic 2; R 43; Xi 38; R 38, R43.	< 5%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

Target Organs: **Acute:** Eye, Skin **Chronic:** Skin

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture: This product is a flammable liquid above flash point shown.

5.3 Advice for firefighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations.

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

7.3 Specific end use(s): No information

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.
Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid

Color: Clear

Odor: Mild

Odor threshold: Not Available

pH-value:	Not Available
Change in condition	
Melting point/Melting range:	No data available
Boiling point/Boiling range:	>200°C
Flash point:	>392°F (>200°C)
Flammability (solid, gaseous):	No data available
Auto/Self-ignition temperature:	Not established
Decomposition temperature:	No data available
Self-igniting:	No data available
Danger of explosion:	This product is a flammable liquid above flash point shown above.
Explosion limits	
Lower:	Not established
Upper:	Not established
Vapor pressure at 25 °C:	<0.1 mmHg
Density at 20°C:	8.64 lbs. per gallon, specific gravity 1.03
Relative density:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Solubility in / Miscibility with Water:	Not Available
Specific Gravity 20oC: (Water = 1):	Not Available
Viscosity:	
Dynamic:	No data available
Kinematic:	No data available
Solvent content:	
Organic solvents:	No data available
VOC (EC)	No data available
9.2 Other information	No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, hydrocarbons and soot.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: Contact with incompatible materials

10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

10.6 Hazardous decomposition products: Will not occur

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

Acute Dermal	LD 50	>20,000 mg/kg	Rabbit
Acute Oral	LD 50	>5,000 mg/kg	Rat

Primary irritant effect: Contact with this product can be irritating to exposed skin and eyes.

Sensitization: This product is considered a skin sensitizer.

Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No evidence is currently available on this product's effects on aquatic life.

12.2 Persistence and degradability: No data available

12.3 Bio accumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxicological effects:

Remark:

Additional ecological information: No data available

General notes: No specific data is available for this product, however this product is expected to be readily biodegradable

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: None Listed

EU WASTE CODE: Not Listed

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

14 Transport information

14.1 UN-Number

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG: IATA: NOT REGULATED

14.2 UN proper shipping name

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG: IATA: NOT REGULATED

14.3 Transport hazard class(es)

DOT: CAN: NOT REGULATED

ADR: ADN: IMDG: IATA NOT REGULATED

14.4 Packing group

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG :IATA NOT REGULATED

14.5 Environmental hazards

N/A

Marine Pollutant: NOT REGULATED

Special Marking (ADR):
For surface shipments within the USA Not Regulated.

14.6 Special precautions for user

Danger code (Kemler): NOT APPLICABLE

EMS Number:

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

NOT APPLICABLE

Transport/Additional information

ADR

Tunnel restriction code NOT APPLICABLE

UN "Model Regulation": NOT APPLICABLE

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases:

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation.
 IATA: International Air Transport Association.
 ACGIH: American Conference of Governmental Industrial Hygienists.
 EINECS: European Inventory of Existing Commercial Chemical Substances.
 ELINCS: European List of Notified Chemical Substances.
 CAS: Chemical Abstracts Service (division of the American Chemical Society).
 NFPA: National Fire Protection Association (USA).
 HMIS: Hazardous Materials Identification System (USA).
 LC50: Lethal concentration, 50 percent.
 LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: AUS-V™ - Part B

1.2 Article No.: AUS-V™ - PART B

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Tox: 4 H332 Harmful if inhaled.
Skin Sens: 1 H317 May cause an allergic skin reaction.
STOT SE: 3 H335 May cause respiratory irritation.

Classification according to Directive 1999/45/EC:

Xn; Harmful
R20: Harmful if inhaled.
Xi; Irritant
R37: Irritating to respiratory system
Xi; Sensitizing
R43: may cause sensitization by skin contact.

Information concerning particular hazards for human and environment:

Product Description: This product is a water –white – pale straw colored liquid with a mild odor.

Health Hazards: Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization

Flammability Hazards: This product is Flammable above its flash point of 320°F (160°C)

Reactivity Hazards: None known.

Environmental Hazards: The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07

Signal Word: Warning

Hazard-determining components of labeling:

Hexamethylene di-isocyanate oligomers, isocyanurate

Hexamethylene-di-isocyanate

Hazard statements

H332: Harmful if inhaled

H317: May cause an allergic skin reaction

H335: may cause respiratory irritation

Precautionary statements

P260: Do not breath dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards:

Combustible liquid.

May cause eye irritation.

On contact with water carbon monoxide is released.

Results on PBT and vPvB assessment:

PBT: no

vPvB: no

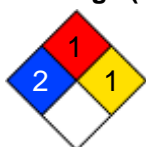
Hazard description:

Canadian WHMIS Classification: This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

WHMIS-symbols:



NFPA ratings (scale 0 - 4)



Health = 2

Fire = 1

Reactivity = 1

HMIS-ratings (scale 0 - 4)

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

Health	2
Fire	1
Reactivity	1

Health = 2

Fire = 1

Reactivity = 1

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 28182-81-2 EINECS: 931-274-8 Reg. Number: 01-2119485796-17-0002	Hexamethylene diisocyanate oligomers, Isocyanurate HAZARD CLASSIFICATION: Xn R20, Xi R37, R43 Acute tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H##%	99.6%
CAS: 822-06-0 EINECS 212-485-8 Reg. Number; 01-2119457571-37-0001	Hexamethylene-di-isocyanate HAZARD CLASSIFICATION: T R23, Xn R42/43; Xi R36/37/38 Acute tox. 1, H330; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	< 0.5%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

No further relevant information available.

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture: Combustible. During combustion toxic vapors are released.

5.3 Advice for firefighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations. Wear full protective clothing, self contained breathing apparatus, gloves and boots. Do not approach downwind without self contained breathing mask. (NIOSH approved).

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Sections 7, 8, 13, for further cautions, clean up and Disposal Considerations).

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. provide good ventilation. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store in a cool dry place with a floor coated or lined for watertight basin. Avoid direct contact with skin and eyes. Do not store near acids or amines. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available... Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

7.3 Specific end use(s): No information

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8 Exposure controls/personal protection

The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I.

Exposure Limits

Homopolymer of Hexamethylene Diisocyanate (28182-81-2)

AUS-V Part B Exposure Limit

Time weighted average 0.5 mg/m³

AUS-V Part B Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m³ (15-min)

Hexamethylene-1,6-Diisocyanate (822-06-0)

US. ACGIH Threshold Limit Values

Time weighted average 0.005 ppm

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

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Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Colorless to pale yellow

Odor:

none

Odor threshold:

Not Available

pH-value:	Not Applicable (reacts with Water)
Boiling point/Boiling range:	Decomposition
Flash point:	>365°F (>185°C) (IN EN 22719)
Auto/Self-ignition temperature:	833°F (445°C) (DIN 51794)
Decomposition temperature:	357.8°F (181°C)
Explosion limits oxidizing properties	Not established (Not oxidizing) Not established (Not oxidizing)
Vapor pressure at 68°F (20 °C):	HDI Polyisocyanate: 5.2 X 10-9 mm/Hg
Density at 73°F (23°C):	9.65 lbs. per gallon, specific gravity 1.16 g/cm ³
Bulk density:	Approximately 1,150 kg/m ³
Solubility in / Miscibility with Water:	Reacts slowly to liberate CO ₂ gas.
Viscosity:	
Dynamic:	800 mPa.s (cps) @68°F (20°C)
Solvent content:	
Organic solvents:	
VOC (EC)	0.00
9.2 Other information	No further relevant information available

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable at humanly acceptable environment temperature

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, hydrocarbons and soot.

10.3 Possibility of hazardous reactions: reacts with water, aqueous solutions and alcohols, amines, bases, protic solvents with a great release of CO₂, and hence a risk of a pressure build up in confined areas, and forms an insoluble solid presipate.

10.4 Conditions to avoid: Contact with incompatible materials above

10.5 Incompatible materials: no further relevant information available than has been provided here.

10.6 Hazardous decomposition products: On thermal decomposition (pyrolysis) releases: toxic gases, Carbon dioxide,

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Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

11 Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

LD/LC50 values:

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Oral LD0 > 2500 mg/kg (rat) (OECD 423 (female))

Dermal LD0 > 2000 mg/kg (rabbit) (OECD 402)

> 2000 mg/kg (rat) OECD 402)

Inhalative LC50/4h 0.390 mg/l (rat) (OECD 403)

822-06-0 hexamethylene-di-isocyanate

Oral LD50 746 mg/kg (rat) (OECD 401)

Dermal LD50 > 7000 mg/kg (rat) (OECD 402)

Inhalative LC50/4h 0.124 mg/l (rat) (OECD 403)

Primary irritant effect: Not classified as irritating to skin or eyes according to OECD 404, 405

Inhalation: May cause respiratory irritation. Source; Unpublished reports.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOAEC/ 6h 3mg/m³ (rat) (OECD TG 403) (TRGS)

Sensitization:

May cause sensitization on contact with skin.

(OECD 429) (mouse)

Is Not considered as an respiratory sensitizer (Guinea-pig)

Human data available. Unpublished reports.

Repeated dose toxicity:

Is Not considered health hazardous by prolonged or repeated exposure. (Unpublished reports)

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOEC 3.3mg/m³ (rat) (OECD 413)

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Tox Repeat 0.005 ppm (rat) (OECD 453)

Carcinogenicity:

Animal studies have not shown any carcinogenic potential.

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Carc 0.164 ppm (rat) (OECD 453)

Mutagenicity:

Chromosomal aberrations (OECD 473, V79 cells):

Negative

Unpublished reports

Reproductive toxicity:

This product is Not considered hazardous to the reproduction.

(Internal evaluation)

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Dvlp/Tera Tox 0.3ppm (rat) (OECD 414)

NOAEC Material Tox 0.005 ppm (rat) (OECD 414)

NOAEC Fert 0.3 ppm (rat) (OECD 422)

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12 Ecological information

12.1 Toxicity

Aquatic toxicity: No evidence is currently available on this product's effects on aquatic life. Source unpublished reports.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

EC10/72h (static) 370 mg/l (Desmodesmus subspicatus) (EU C.3)
 EL/50?48h (static) 127 mg/l (Daphnia magna) (EU C.2)
 ErC50(0-72h) (static) 1000 mg/l (Desmodesmus subspicatus) (EU C.3)
 LL0/96h ≥ 82.8 mg/l (Brachydanio rerio) EU C.1)

822-06-0 hexamethylene-di-isocyanate

EC0/48h (static) ≥89.1 mg/l (Daphnia magna) (EU C.2)
 ErC50(0-72h) (static) >77.4 mg/l (Desmodesmus subspicatus) EU C.3)
 LC0/96h (static) ≥82.8 mg/l (Brachydanio rerio) EU C.1)
 NOEC/72h (static) 11.7 mg/l (Desmodesmus Subspicatus) (EU C.3)

12.2 Persistence and degradability:

Not biodegradable

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BOD28 1% (bacteria) ((EU C.4-E) (Unpublished report)
 DT50 3h (photolysis) ((79°F, 25°C) (AOPWIN v1.92)
 .7h (hydrolysis) ((73°F, 23°C) (ASTM D 4666(internal evaluation)

822-06-0 hexamethylene-di-isocyanate

BOD28 42% (bacteria) ((EU C.4-E)
 DT50 79°F, 25°C, 48.44 h (Photolysis) (AOPWIN v1.92)
 73°F, 23°C 0.23 h (Hydrolysis) (ASTN 4666)

Other information:

Reacts with:

-water and forms insoluble solid precipitate.

12.3 Bio accumulative potential:

Log Pow, see section 9.

Not bioaccumulable

(internal evaluation)

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BCF 3.2 (fish) (BCFWIN v.217)

822-06-0 hexamethylene-di-isocyanate

BCF 58 (fish) BCFWIN v2.17)

12.4 Mobility in soil:

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Log Koc 7.8 (.) (PCKOCv1.66)

822-06-0 hexamethylene-di-isocyanate

Log Koc 5861 (.) (PCKOCv.166)

Other information: Formation of insoluble polyuria

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Ecological effects:

Behavior in sewerage processing plants.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

EC50/3h (static) (3828mg/l (bacteria) (OECD 209)

822-06-0 hexamethylene-di-isocyanate

EC50/3h (static) (842mg/l (bacteria) (OECD 209)

Additional ecological information;

General notes: Not classified as Dangerous for the environment

12.5 Results of PBT and vPvB assessment

PBT: no

vPvB: no

12.6 Other adverse effects: No further relevant information available

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Neutralize with a mixture of ammonia solution (190 gm/l), water and ethanol (5%, 50% AND 45%)

Incinerate at a licensed installation in the EU. Disposal in USA waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: None Listed

EU WASTE CODE: 08-05-01

Un-cleaned packaging recommendation:

Allow container to drain thoroughly. Incinerate drums and containers at an approved licensed facility follow all local and federal laws and requirements. This is only a recommendation in lieu of direction.

14 Transport information

14.1 UN-Number

DOT: Canada TGD

not regulated

ADR, IMDG, IATA:

Not restricted (Non regulated)

14.2 UN proper shipping name

DOT: Canada TGD

NOT RESTRICTED NOT REGULATED

ADR, IMDG, IATA:

NOT Restricted (non regulated)

14.3 Transport hazard class(es)

DOT & Canada TGD



ADR, IMDG, IATA



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Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

14.4 Packing group

DOT, Canada TGD not regulated

14.5 Environmental hazards:

Marine pollutant: This products ingredients are not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

14.6 Special precautions for user

Danger code (Kemler): No data available

EMS Number: No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

Transport/Additional information

When individual containers are less than 33,332 lbs (15119 kg)
This material ships as non regulated

ADR

Tunnel restriction code No data available

UN "Model Regulation":

No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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Printing Date: 12/30/2014

Revision: 12/30/2014

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

16 Other information

Relevant phrases:

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

Precautionary statements

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

R34: Causes burns.

R43: May cause sensitization by skin contact

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistance Slurry - Part A

1.2 Article No.: HERMETIC™ 4.8S Urethane – Part A

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS:

These precautionary statements are not prescribed by directive 1272/2008 as this product is not classified as hazardous under this directive. Wash hands thoroughly after handling with soap and water. Wear protective gloves. Protective clothing, eye protection and face protection. If swallowed or gets in eyes or on skin, or inhaled call a POISON CENTER or doctor/physician if you feel unwell. If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. Take off contaminated clothing and wash before reuse. Store in a well ventilated place. Keep container tightly closed.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:

None required under this directive as it is not hazardous

Signal word: none required under this directive

Hazard Statements:

H302: Harmful if swallowed

Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and Local regulations.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

Hazards not classified: Wash hands thoroughly after handling with soap and water. Wear protective gloves. Protective clothing, eye protection and face protection. If swallowed or gets in eyes or on skin, or inhaled call a POISON CENTER or doctor/physician if you feel unwell. If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. Take off contaminated clothing and wash before reuse. Store in a well ventilated place. Keep container tightly closed.

Hazard description:

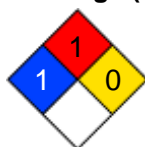
Canadian WHMIS Classification:

non corrosive, non hazardous

WHMIS-symbols:

None required

NFPA ratings (scale 0 – 4)



Health = 1
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 – 4)

Health	1
Fire	1
Reactivity	0

Health = 1
Fire = 1
Reactivity = 0

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 8001-79-4 EINECS: 232-293-8	Castor oil GHS Classification: Not hazardous	50-69%
CAS: 7732-18-5 EINECS:	Water GHS Classification Not Hazardous	12-21%
CAS: # priority	Benzoate Esters	10-28%

Additional information: WHMIS Ingredient Disclosure List.

none

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation develops.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Hazards: Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gas. Burning produces toxic and noxious fumes. Down wind personnel must be evacuated.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations.

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

. Do not store near acids.. keep containers tightly closed in a cool dry and well ventilated place.

7.3 Specific end use(s): keep from freezing.

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Safety goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Various colors

Odor:

Slight

Odor threshold:

N/A

pH-value:

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

212°F (100°C)

Flash point:

N/A

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

N/A

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 20 °C:

No data available

Density at 20°C:

8.2 lbs. per gallon @ 70°F (21°C)

Relative density:

No data available

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Not Available

Specific Gravity 20oC: (Water = 1):

0.984

Viscosity:

100 cps (100mPa) @ 73°F (23°C)

Solvent content:

Organic solvents:

0

VOC (EC)

0.00%

9.2 Other information

No data available

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, NO_x, amines, ammonia and others.

10.3 Possibility of hazardous reactions: No data available

10.4 Conditions to avoid: no data

10.5 Incompatible materials: organic acids, citric acid, acetic acid, etc

10.6 Hazardous decomposition products: Nitric acid, Ammonia, Nitrogen oxides (NO_x), Nitrogen oxide can react with water vapors to form corrosive nitric acid.

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Acute toxicity:

Acute Dermal	LD 50	>2,000 mg/kg	Rabbit
Acute Oral	LD 50	>2,000 mg/kg	Rat

Primary irritant effect: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

Sensitization: This product is considered a skin sensitizer.

Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

Reproductive toxicity information: No information concerning the effects of this product and its components on the human reproduction system.

12 Ecological information

12.1 Toxicity

Aquatic toxicity: No data available

12.2 Persistence and degradability: No data available

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

Ecotoxicological effects:

Remark:

Additional ecological information: No data available

General notes:

Component Information:

no other information available

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: D002

EU WASTE CODE: To Be Established

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

14 Transport information

14.1 UN-Number

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.2 UN proper shipping name

ADR: DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.3 Transport hazard class(es)

DOT: CAN: ADR: ADN: IMDG: IATA:

Class:

Label:

NOT REGULATED

14.4 Packing group

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.5 Environmental hazards:

Marine pollutant:

NOT REGULATED

14.6 Special precautions for user

Danger code (Kemler):

EMS Number:

No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

Transport/Additional information

ADR

Limited Quantities (LQ)

Excepted Quantities (EQ)

No data available

Transport Category:

Tunnel restriction code:

UN "Model Regulation":

No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Safety Data Sheet

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Printing Date: 4/22/2015

Revision: 4/22/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part A

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

WHMIS Ingredient Disclosure List.

WHIMS Trade Secret Registry Number(s) 6160 Grant date 2/14/2007

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Hazard Statements:

H302: Harmful if swallowed

H318: Causes serious eye damage

Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation.
IATA: International Air Transport Association.
ACGIH: American Conference of Governmental Industrial Hygienists.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
CAS: Chemical Abstracts Service (division of the American Chemical Society).
NFPA: National Fire Protection Association (USA).
HMIS: Hazardous Materials Identification System (USA).
LC50: Lethal concentration, 50 percent.
LD50: Lethal dose, 50 percent.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: HERMETIC™ 4.8S Urethane - Part B

1.2 Article No: HERMETIC™ 4.8S Urethane - Part B

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture According to 2012 OSHA hazard Communication

Standard: 29 CFR part 1910.1200

Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Toxicity.	Category 4 (Inhalation-Mist)	Acute toxicity
Eye Dam./Irrit.	Category 2B	Serious eye damage/eye irritation
Skin Corr./Irrit.	Category 2	Skin corrosion/irritation
Skin Sens.	Category 1B	Skin Sensitization
Resp. Sens.	Category 1	Respiratory Sensitization
Carc.	Category 2	Carcinogenicity
STOT SE	Category 3 (irritating to respiratory sys.)	Specific target organ tox. - single exposure
STOT RE	Category 2 (by inhalation)	Specific target organ tox.- repeated exposure

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS05 GHS08

Signal word: Danger

Hazard Statements:

H320: Causes eye irritation.
H315: Causes skin irritation
H332: Harmful if inhaled
H317: May cause allergic skin reaction
H335: May cause respiratory irritation
H351: Suspected of causing cancer
H373: May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation)

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

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Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

Precautionary Statements: (Prevention):

Prevention

P280: Wear protective gloves/protective clothing/eye & face protection

P271: Use only outdoors or in well-ventilated areas

P260: Do not breathe dust/gas/mist/vapors

P201: Obtain special instructions before use

P261: Avoid breathing dust

P202: Do not handle until all safety precautions have been read and understood

P284: (In case of inadequate ventilation) wear respiratory protection

P272: Contaminated work clothing should not be allowed out of the work place

P264: Wash hands thoroughly after handling

Precautionary Statements: (Response):

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P311: IF exposed or concerned: Call a POISON CENTER or doctor/physician

P314: Get medical advice/attention if you feel unwell

P303+P361: IF ON SKIN (or hair): Wash with plenty of soap and water

P333+P311: If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician

P362_P364: Take off contaminated clothing and wash before reuse

P332_P313: If skin irritation occurs, Get medical advice/attention

P337_P311: If eye irritation persists: Call a POISON CENTER or doctor /physician

P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Precautionary statements: (Storage):

P403+P223+P403: Store in a well-ventilated place. Keep container tightly closed. Store locked up

Precautionary statements: (Disposal):

P501: Disposal of contents/container to be specified in accordance with State, Federal and Local regulations.

Hazards not otherwise classified:

No specific dangers known. If the regulations/notes for storage and handling are considered.

Labeling of special preparations GHS:

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ALLERGIC RESPIRATORY REACTIONS INCLUDING WEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

According to Regulation 1994 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Emergency overview;

DANGER

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ALLERGIC RESPIRATORY REACTIONS INCLUDING WEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION
AVOID CONTACT WITH SKIN AND EYES. SKIN OR EYE CONTACT MAY CAUSE IRRITATION.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

3 Composition/ Information on Ingredients

According to regulation 2012 OSHA Hazard Communication Standard 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Chemical name</u>	<u>Content (W/W)</u>
101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)	25% - 50%
17589-24-1	1,3-Diazetidene-2,4-dione, 1,3-bis(4-(4- Isocyanatophenyl) Methyl)-	1% - 3%
26447-40-5	Methylenediphenyl Diisocyanate	3% - 7%
57636-09-6	Isocyanic acid, polymethylenepolyphenylene ester	1% - 3%
9016-87-9	P-MDI	50% - 75%

According to regulation 1994 OSHA Hazard Communication Standard 29 CFR Part 1910.1200

101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)	25% - 50%
17589-24-1	1,3-Diazetidene-2,4-dione, 1,3-bis(4-(4- Isocyanatophenyl) Methyl)-	1% - 3%
26447-40-5	Methylenediphenyl Diisocyanate	3% - 7%
57636-09-6	Isocyanic acid, polymethylenepolyphenylene ester	1% - 3%
9016-87-9	P-MDI	50% - 75%

Hazard description:

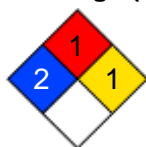
Canadian WHMIS Classification:

non corrosive, non hazardous

WHMIS-symbols:

None required

NFPA ratings (scale 0 – 4)



Health = 2
Fire = 1
Reactivity = 1

HMIS-ratings (scale 0 – 4)

Health	2
Fire	1
Reactivity	1

Health = 2
Fire = 1
Reactivity = 1

2.3 Other hazards

No known

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

4 First Aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation develops.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

4.2 Most important symptoms and effects, both acute and delayed. Also see labelling

Acute: This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Hazards: Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture:

Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gas. Burning produces toxic and toxic fumes. Downwind personnel must be evacuated.

5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations.

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

. Do not store near acids and bases... keep containers tightly closed in a cool dry and well ventilated place.

7.3 Specific end use(s): keep from freezing.

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Components with occupational exposure limits

Diphenylmethane-4m4'-	OSHA PEL	CVL 0.02 ppm 0.2 mg/m ³ ; CVL 0.02 ppm 0.2 mg/m ³
Diisocyanate (MDI)	ACGIH TLV	TWA value 0.005 ppm;
P-MDI	OSHA PEL	CLV 0.02 ppm 0.2 mg/m ³ ; CLV 0.02 ppm 0.2 mg/m ³
	ACGIH TLV	TWA value 0.005 ppm;
Isocyanic acid	OSHA PEL	CLV 0.02 ppm 0.2 mg/m ³ ; CLV 0.02 ppm 0.2 mg/m ³
Polymethylenepolyphenylene ester (P-MDI)	ACGIH TLV	TWA value 0.005 ppm

Personal protective equipment

Provide local exhaust ventilation to maintain recommended P.E.L.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.



Face mask

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.



Protective gloves

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.



Safety goggles

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Dark amber to brown liquid

Odor:

faint odor aromatic

Odor threshold:

Not Available

pH-value:

N/A

Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

392°F (200°C)

Flash point: (open cup)

428 °F (220°C)

Flammability (solid, gaseous):

Not flammable

Auto/Self-ignition temperature:

482°F (250°C)

Decomposition temperature:

No data available

Self-igniting:

Not self igniting

Danger of explosion:

N/A

Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 20 °C:

0.00016 mmHg

Density at 20°C:

122g/cm³

Relative density:

10.3 pounds per gallon @ 25°C

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Reacts with water

Specific Gravity 20oC: (Water = 1):

Not Available

Viscosity:

200 cps (200mPa) @ 77°F

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

Solvent content:
Organic solvents:

0

VOC (EC)

0.00%

9.2 Other information

No data available

10 Stability and reactivity

10.1 Reactivity

Corrosion to metals:

No corrosive effect on metal

Oxidizing properties:

Not-fire propagating

10.2 Chemical stability:

Product is stable if stored and handled as prescribed/indicated.

10.3 Possibility of hazardous reactions:

Reacts with water, with formation of carbon dioxide. Risk of bursting. Reacts with alcohols. Reacts with acids. Reacts with alkalis. Reacts with amines. Risk of exothermic reaction. Risk of polymerization.

Contact with certain rubbers and plastics can cause brittleness of the substance/product with subsequent loss in strength.

10.4 Conditions to avoid:

Avoid moisture

10.5 Incompatible materials:

Acids, amines, alcohols, water, alkalis, strong bases, Substances/products that react with isocyanates.

10.6 Hazardous decomposition products:

Hazardous decomposition products: carbon monoxide, carbon dioxide, nitrogen oxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gasses/vapors.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11 Toxicological information

11.1 Information on toxicological effects: Toxicity data is available for this product

Primary routes of exposure:

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact.

Routes of entry for gasses include inhalation and eye contact. Skin contact may be a route of entry for Liquefied gasses.

Acute toxicity effects:

Assessment of acute toxicity. Inhalation of vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, on the onset of which may be delayed.

ORAL

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Type of value LD50

Species: rat (male/female)

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

Value: > 2,000 mg/kg (Directive 84/449/EEC, B.1)

Inhalation

Type of value: LC50

Species: rabbit (male/Female)

Value: 9,400 mg/kg

Dermal

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Type of value: LD50

Species: rat (male/Female)

Value: 2.0 mg/l (OECD Guideline 403)

An aerosol was tested.

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Skin

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Species: Rabbit

Result: Irritating

Method: Draize test

Eye

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Species: Rabbit

Result: Irritating

Method: Draize test

Sensitization

Assessment of sensitization. Sensitization after skin contact is possible. The substance may cause sensitization of the respiratory tract. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL?TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapor-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 4/10/2015

Revision: 4/15/2015

Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part B

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Buehler test:

Species Guinea pig

Result: Sensitizing

Mouse Local Lymph Node Assay (LLNA)

Species: mouse

Result: sensitizing

Other

Species: Guinea Pig

Result: sensitizing

Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

Chronic toxicity effects:

Repeated dose toxicity:

Assessment of repeated dose toxicity. The substance may cause damage to the olfactory epithelium after repeated inhalation. The substance may cause damage to the lung. These effects are not relevant to humans at occupational levels of exposure. after repeated inhalation.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Experimental/calculated data: rat (Wistar) (male/female) Inhalation 2 years, 6 hr/day 0, 0.2, 1, 6 mg/m³, olfactory epithelium

NOAEL: 0.2 mg/m³

LOAEL: 1 mg/m³

The substance may cause damage to the olfactory epithelium after repeated exposure. These effects are not relevant to humans at occupational levels of exposure. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

Generic toxicity

Assessment of mutagenicity. The substance was mutagenic in various bacterial test systems; However, these results could not be confirmed in tests with mammals.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Genetic toxicity in vitro: OECD Guideline 471 Ames-test Salmonella hyphimunium: with and without metabolic activation ambiguous

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Genetic toxicity in vitro: OECD Guideline 474 Micronucleus assay rat (male) inhalation negative

No clastogenic effect reported

Carcinogenicity

Assessment of carcinogenicity. A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure' Experimental/calculated data: OECD Guideline 453 rat inhalation 0, 0.2, 1 6 mg/m³

Result: lung tumors.

Reproductive toxicity

Assessment of reproduction toxicity. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

Teraogenicity

Assessment of teratogenicity: The substance did not cause malformations in animal studies; however, Toxicity to development was observed at high doses that were toxic to the parental animals.

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Development

OECD Guideline 414 rat inhalation 0,1,4, 12mg/m³

NOAEL Mat: 4 mg/m³

NOAEL Teratog: 4 mg/m³

The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

Symptoms of Exposure

The most important known symptoms and effects are described in the labeling (see section 2) and/or section 11. Eye irritation, skin irritation, allergic symptoms.

Medical conditions aggravated by overexposure

The isocyanate component is a respiratory sensitizer. It may cause allergic skin reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders.

Persons with history of respiratory disease or hypersensitivity should not be exposed to this product.

Pre-employment and periodic medical examinations with respiratory function tests (FEV₁, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, or other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended..

12 Ecological information

12.1 Toxicity

Aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is not likely harmful to aquatic organisms.

The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxicity to fish

LC0 (96h) > 1,000 mg/l, Brachydanio rerio (OECD Guideline 203, static)

Aquatic invertebrates

EC50 (24h) > 1,000 mg/l Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants

EC0 (72h) > 1,640 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aquatic

aerobic bacteria from a domestic water treatment plant/EC50 (3h): > 100 mg/l

12.2 Persistence and degradability:

Assessment biodegradation and elimination (H20)

Poorly biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis

Elimination information

0% BOD of the ThOD (28d) (OECD Guideline 302 C) (aerobic, activated sludge) poorly biodegradable.

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on stability in Water (Hydrolysis)

T_{1/2} 20h 79°F (25°C)

12.3 Bio accumulative potential:

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Assessment bioaccumulation potential

Significant accumulation in organisms is not to be expected

Bioaccumulation potential

Bio-concentration factor: 200 (28d), Cyprinus carpio (OCED Guideline 305E)

12.4 Mobility in soil:

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected

Ecological effects:

Remark:

Additional ecological information: No data available

General notes:

Component Information:

no other information available

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: D002

EU WASTE CODE: To Be Established

14 Transport information

14.1 UN-Number

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.2 UN proper shipping name

ADR: DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.3 Transport hazard class(es)

DOT: CAN: ADR: ADN: IMDG: IATA:

Class:

NOT REGULATED

Label:

14.4 Packing group

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

14.5 Environmental hazards:

Marine pollutant:

NOT REGULATED

14.6 Special precautions for user

Danger code (Kemler):

No data available

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EMS Number:

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

Transport/Additional information

ADR

Limited Quantities (LQ)

Excepted Quantities (EQ)

No data available

Transport Category:

Tunnel restriction code:

UN "Model Regulation":

No data available

Further information

DOT: This product is regulated if the amount in a single receptical exceeds the reportable quantity (RQ) = 13,157.9 lb.

15 Regulatory information

Federal regulations:

Regulation status:

Chemical TSCA, US released/ listed

EPCRA 311/312 (Hazard categories):

Acute Chronic

EPCRA 313:

CAS Number

Chemical name

101-68-8

Diphenylmethane-4,4'-diisocyanate (MDI)

9016-87-9

P-MDI

CERCLA RQ

CAS Number

Chemical Name

5000 lbs

101-68-8; 9016-87-9

Diphenylmethane-4,4'-diisocyanate (MDI), P-MDI

Reportable quantities for release:

13,157.9 lbs.

State regulations:

State RTK

CAS Number

Chemical name

MA, NJ, PA

9016-87-9

P MDI

MA, NJ, PA

101-68-8

Diphenylmethane-4,4'-diisocyanate (MDI)

NJ

26447-40-5

Methylenediphenyl diisocyanate'

HFPA Hazard codes;

Health 2, Fire 1, Reactivity 1, Special

HIMIS III rating

Health 2, Flammability 1, Physical hazard 1

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Hazard Statements:

H302: Harmful if swallowed

H318: Causes serious eye damage

Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation.
IATA: International Air Transport Association.
ACGIH: American Conference of Governmental Industrial Hygienists.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
CAS: Chemical Abstracts Service (division of the American Chemical Society).
NFPA: National Fire Protection Association (USA).
HMIS: Hazardous Materials Identification System (USA).
LC50: Lethal concentration, 50 percent.
LD50: Lethal dose, 50 percent.

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According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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Trade Name: HERMETIC™ 4.8S Urethane – Thermal Shock Resistant Slurry - Part C

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: HERMETIC™ 4.8S Urethane - Part C

1.2 Article No.: HERMETIC™ 4.8S Urethane - Part C

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN 46383
Toll Free: 888.323.4445
Tel: (219) 465-7671
Fax: (219) 531-0898
www.elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with CFR 1910 (OSHA HCS)

The product is not classified as hazardous according to EU parliament and councils directive 1999/45/EF.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Contains: Portland Cement

Hazard pictograms:



GHS05



GHS07

Signal Word: Danger

Hazard Statements:

H315 Causes skin irritation.
H317 May cause allergic skin reaction.
H318 May cause respiratory irritation.

Precautionary Statements:

P102 Keep out of reach of children.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P261 Avoid breathing dust.
P302+352 IF ON SKIN: wash with plenty of soap and water.
P305 +351+338. IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P402 +404 Store in a dry place. Store in a closed container.
P501 Dispose of contents/container in accordance with local regulations.

Supplementary precautionary Statements:

P271 Use only outdoors or in well-ventilated area.

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- P264 Wash contaminated skin thoroughly after handling.
 P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P333+313 If skin irritation or rash OCCURS: get medical advice/Attention.
 P361 Remove/take off immediately all contaminated clothing.
 P362 Take off contaminated clothing before reuse.
 P403+233 Store in well-ventilated place. Keep container tightly closed.

2.3. Other hazards

The grain size distribution of silica sand means that it is not hazardous. However, any respirable Crystalline Silica dust generated by processing and handling of silica sand may cause health effects. (EH40 Long term Exposure limit for Silica. Respirable crystalline is 0.3mg.m3)

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 65997-15-1 EC No: 266-043-4 Index No::	Portland cement Classification (EC1272/2008) Classification (67/548/EEC) Skin Irrit. 2-H315 Xi:R41,R37/38. R43. Eye Dam. 1-H318 Skin Sens. 1-H317 STOT SE 3-H335	12-27%
CAS: 14808-60-7 EC No: 238-878-4 Index: No:	ALPHA QUARTZ Classification (EC1272/2008) Classification (67/548/EEC) Not Classified Not Classified	70%-82%
CAS: 1305-62-0	CALCIUM HYDROXIDE SLAKE LIME HYDRATED LIME Classification (EC1272/2008) Classification (67/548/EEC) Not Classified Not Classified	1-6%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers). Additional H statements see Sec 16.

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues. DO NOT INDUCE VOMITING

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

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According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents. Give large amounts of water or milk to a CONSCIOUS PERSON. **Never give (milk or water) to someone who is unconscious**, having convulsions, or who cannot swallow. Seek medical advice.

Take a copy of the label and/or MSDS with the victim to the health professional.

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

Acute: This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

Chronic: Prolonged or repeated skin contact may cause skin reaction product can be removed with water wash exposed skin thoroughly. Seek medical attention if symptoms arise. .

Target Organs: **Acute:** Eye, Skin **Chronic:** Skin

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

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

Treat symptoms and reduce over-exposure.

5 Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture:

this product may form dust and can accumulate electrostatic charges, which may form electric discharges (ignition source). Use proper electrical grounding methods where airborne powder is removed mechanically.

Hazardous decomposition products: Fire creates; Toxic gasses/vapors/fumes of: Carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for Firefighters:

Use standard Protective equipment for firefighters appropriate for surrounding materials.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Personnel should be trained for spill response operations.

6.2 Environmental precautions:

All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up:

Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dust/vapors generated by this product. **Use in a well-ventilated location or provide good ventilation before use.** Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Provide good ventilation. and avoid contact with skin and eyes.. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available... Avoid contact with skin eyes. Do not inhale dust wear appropriate breathing equipment. Contact with eyes or skin may be irritating.. Use only with good ventilation and PPE. Keep container closed when not in use.

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7.3 Specific end use(s): use within the time period as recommended on the technical data sheet.

8 Exposure controls/personal protection

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.
Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.



Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

Protective gloves



Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer. Nitrile gloves are a good choice for using this product.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.



Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

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Tightly sealed goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

Exposure guidelines:

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According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder
Color: White/gray

Odor: N/A

Odor threshold: N/A

pH-value: 9.0-9.6

Change in condition

Melting point/Melting range: N/A

Boiling point/Boiling range: N/A

Flash point: N/A

Flammability (solid, gaseous): No data available

Auto/Self-ignition temperature: N/A

Decomposition temperature: No data available

Self-igniting: No data available

Danger of explosion: N/A

Explosion limits

Lower + Upper: Not established

Vapor pressure at: Not established

Density at 20°C: 1.713 SG 14.27 LBS PER GALLON

Vapor pressure:

Vapor density:

Evaporation rate:

Solubility in / Miscibility with Water: Mixable

Specific Gravity 23 C: (Water = 1): N/A

Viscosity:

Dynamic: No data available

Kinematic: No data available

Solvent content:

Organic solvents: No data available

VOC (EC) 0.0 g/l

9.2 Other information No data available

10 Stability and reactivity

10.1 Reactivity: no data available

10.2 Chemical stability: Product is stable under normal temperature conditions..

Thermal decomposition / conditions to be avoided: none known

10.3 Possibility of hazardous reactions: none known

10.4 Conditions to avoid: Avoid contact with strong oxidizers

10.5 Incompatible materials: Bases, Alkalis (inorganic), Acids, oxidizing polymers

10.6 Hazardous decomposition products: Fire or high temperatures create:; carbon monoxide; carbon dioxide

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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Revision: 12/1/2014

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11 Toxicological information

11.1 Information on toxicological effects:

Inhalation

Irritating to respiratory system.

Ingestion

May cause discomfort if swallowed. May cause stomach pain or vomiting.

Skin Contact

Irritating to skin. May cause sensitization by skin contact

Eye Contact

Risk of serious damage to eyes. Contact with concentrated chemical may very rapidly cause severe eye damage, possible loss of sight.

Medical considerations: Skin disorder and allergies.

12 Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability:

Degradability

12.3 Bio accumulative potential:

N/A.

12.4 Mobility in soil: No data available

not relevant ,due to form of product (powder)

12.5 Results of PBT and vPvB assessment

PBT.vPvB assessment not available, chemical assessment not required /not conducted

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan. Recommended to contact local licensed professional waste disposal service.

RCRA WASTE CODE: None Listed

EU WASTE CODE: Not Listed

14 Transport information

14.1 UN-Number

IMDG:

ADR, DOT, IATA, TGD

NO UN NUMBER REQUIRED NON HAZARDOUS IN ALL RESPECTS

NOT REGULATED,NOT DANGEROUS GOODS

14.2 UN proper shipping name

ADR, IMDG, IATA: DOT: TGD

, NOT REGULATED, NOT DANGEROUS GOODS

14.3 Transport hazard class(es)

DOT

Class:

Label:

NONE

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ADR, IMDG, IATA Class: Label:	NONE
IMDG Class: Label:	NONE
IATA Class: Label:	NONE
14.4 Packing group DOT, ADR, IMDG, IATA:	NONE
14.5 Environmental hazards: Marine pollutant:	This products ingredients are not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)
14.6 Special precautions for user Danger code (Kemler): EMS Number:	No data available No data available
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	No data available
Transport/Additional information	
ADR Tunnel restriction code	No data available
UN "Model Regulation":	No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.
United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:
 None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):
 All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):
 None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):
 None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Safety Data Sheet

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16 Other information

Relevant phrases:

Acute Tox. Acute Toxicity

Aquatic Acute. Acute aquatic toxicity

H302: Harmful if swallowed

H312: Harmful in contact with skin

H332: Harmful in contact with skin

H315: causes skin irritation

Precautionary Statements:

P102 Keep out of reach of children.

P280 Wear protective gloves/protective clothing/eye protection/face protection

P261 Avoid breathing dust.

P302+352 IF ON SKIN: wash with plenty of soap and water.

P305 +351+338. IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, If present and easy to do so. Continue rinsing.

P402 +404 Store in a dry place. Store in a closed container.

P501 Dispose of contents/container in accordance with local regulations.

Supplementary precautionary Statements:

P271 Use only outdoors or in well-ventilated area.

P264 Wash contaminated skin thoroughly after handling.

P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P333+313 If skin irritation or rash OCCURS: get medical advice/Attention.

P361 Remove/take off immediately all contaminated clothing.

P362 Take off contaminated clothing before reuse.

P403+233 Store in well-ventilated place. Keep container tightly closed.

R21: Harmful in contact with skin

R34: Causes burns.

R43: May cause sensitization by skin contact

R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.