SAFETY DATA SHEET

D.E.H.™ 517 Epoxy Curing Agent

Version	Revision Date:	SDS Number:	Date of last issue: 11-10-2020
6.1	06-10-2021	101211628	Date of first issue: 06-10-2021

BLUE CUBE OPERATIONS LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the pre-cautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1. IDENTIFICATION

Product name	:	D.E.H.™ 517 Epoxy Curing Agent
Product code	:	000000001000000072

Manufacturer or supplier's details

Company name of supplier	:	BLUE CUBE OPERATIONS LLC
Address	:	190 CARONDELET PLAZA, SUITE 1530 CLAYTON MO 63105-3467
Telephone	:	(844) 238-3445
E-mail address	:	INFO@OLIN.COM
Emergency telephone	:	+1 800 424 9300
Local Emergency Contact	:	800-424-9300/703-741-5970
Identified uses	:	Hardener for epoxy resin.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral)	:	Category 4
Acute toxicity (Dermal)	:	Category 4
Skin corrosion	:	Category 1
Serious eye damage	:	Category 1
Skin sensitization	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : Harmful if swallowed or in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary Statements :

Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Triethylenetetramine mixture	112-24-3	70 - 90
Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer	38294-69-8	10 - 30

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled	:	Move person to fresh air; if effects occur, consult a physician.
In case of skin contact	:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be immediately available.
In case of eye contact	:	Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
If swallowed	:	Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.
Most important symptoms and effects, both acute and delayed	:	Aside from the information found under Description of first aid measures(above)any additional important symptoms and effects are described in Section 11: Toxicology Information.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media	:	Do not use direct water stream. May spread fire.
Specific hazards during fire fighting	:	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.
Further information	:	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the 'Accidental Release Measures' and the 'Ecological Information' sections of this (M)SDS.
Special protective equipment for fire-fighters	:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill.

Ventilate area of leak or spill.
Refer to section 7, Handling, for additional precautionary measures.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions : Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up : Contain spilled material if possible.
Absorb with materials such as:
Sand.
Collect in suitable and properly labeled containers.
See Section 13, Disposal Considerations, for additional information.
Avoid contact with absorbent materials such as:
Ground corn cobs.
Moist organic absorbents.
Peat moss.
Sawdust.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
Do not swallow.
Avoid prolonged or repeated contact with skin.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.
Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.
See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage : Store in a cool, dry place.
Avoid contact with metals such as:
Brass.
Bronze.
Copper.
Copper alloys.

Recommended storage temperature : 32 - 86 °F / 0 - 30 °C

Storage period : 24 Months

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters / Permissible	Basis

		exposure)	concentration	
Triethylenetetramine mixture	112-24-3	TWA	1 ppm	US WEEL

Engineering measures : Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Filter type : The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ('EVAL'). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ('latex'). Neoprene. Nitrile/butadiene rubber ('nitrile' or 'NBR'). Polyvinyl alcohol ('PVA'). Polyvinyl chloride ('PVC' or 'vinyl'). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.

Skin and body protection : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Color : Yellow

Odor	:	Amine.
Odor Threshold	:	No test data available
pH	:	Not applicable
Melting point/range	:	Not applicable
Freezing point		No test data available
Boiling point/boiling range	:	531 °F / 277 °C Method: Literature (based on major component)
Flash point	:	> 298 °F / > 148 °C Method: closed cup
Evaporation rate	:	No test data available
Flammability (solid, gas)	:	Not applicable to liquids
Upper explosion limit / Upper flammability limit	:	7.2 %(V) Method: Literature
Lower explosion limit / Lower flammability limit	:	0.7 %(V) Method: Literature
Vapor pressure	:	< 0.01 kPa (68 °F / 20 °C) Method: Literature (based on major component)
Relative vapor density	:	5 (68 °F / 20 °C) Method: Literature (major component)
Relative density	:	1.01 Method: Literature
Solubility(ies)		
Water solubility	:	Slightly soluble
Partition coefficient: n-octanol/water	:	No data available.
Autoignition temperature	:	635 °F / 335 °C Method: Literature
Decomposition temperature	:	No test data available
Viscosity		
Viscosity, dynamic	:	100 - 150 cP (77 °F / 25 °C)

		Method: ASTM D 445
Viscosity, kinematic	:	No test data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

Note: These are the Reference Points for these Physical Properties listed above, unless otherwise noted in their respective Physical Property value information: Boiling Point at 760 mmHg; Evaporation Rate Butyl Acetate = 1; Relative Vapor Density Air = 1; and Relative Density Water = 1.
NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under recommended storage conditions. See Storage, Section 7.
Possibility of hazardous reactions	:	Polymerization will not occur.
Conditions to avoid	:	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Reaction with carbon dioxide may form an amine carbamate. Smoke may be generated depending on vapor pressure of mixture. Product absorbs carbon dioxide from the air.
Incompatible materials	:	Avoid contact with oxidizing materials. Avoid contact with: Acids. Acrylates. Alcohols. Aldehydes. Halogenated hydrocarbons. Ketones. Avoid contact with metals such as: Brass. Bronze. Copper alloys. Avoid contact with absorbent materials such as: Ground corn cobs. Moist organic absorbents. Peat moss. Sawdust.
Hazardous decomposition products	:	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Ammonia. Ethylenediamine. Volatile amines.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Inhalation
Ingestion

Acute toxicity

Harmful if swallowed or in contact with skin.
Swallowing may result in burns of the mouth, throat, and gastrointestinal tract.

Product:

Acute oral toxicity	:	Remarks: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in burns of the mouth and throat. Swallowing may result in gastrointestinal irritation or ulceration. Remarks: As product: Single dose oral LD50 has not been determined. LD50 (Rat): 1,061 mg/kg Method: Estimated. Remarks: For the major component(s):
Acute inhalation toxicity	:	Remarks: Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Remarks: As product: The LC50 has not been determined.
Acute dermal toxicity	:	Remarks: Prolonged or widespread skin contact may result in absorption of potentially harmful amounts. Remarks: As product: The dermal LD50 has not been determined. LD50 (Rabbit): 1,465 mg/kg Method: Estimated. Remarks: For the major component(s):

Components:

Triethylenetetramine mixture:

Acute oral toxicity	:	LD50 (Rat, male and female): 1,716 mg/kg
Acute inhalation toxicity	:	Remarks: The LC50 has not been determined.
Acute dermal toxicity	:	LD50 (Rabbit): 1,465 mg/kg

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Acute oral toxicity	:	Remarks: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. LD50 (Rat, female): > 300 - < 2,000 mg/kg Method: OECD Test Guideline 420
Acute inhalation toxicity	:	Remarks: The LC50 has not been determined.
Acute dermal toxicity	:	Remarks: The dermal LD50 has not been determined.

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Product:

Remarks	:	Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Components:

Triethylenetetramine mixture:

Result	:	Causes burns.
Remarks	:	Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.
Remarks	:	Classified as corrosive to the skin according to DOT guidelines.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Method	:	OECD Test Guideline 431
Result	:	Corrosive
Remarks	:	Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation

Causes severe skin burns and eye damage.

Product:

Remarks	:	May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Components:

Triethylenetetramine mixture:

Result	:	Corrosive
Remarks	:	May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chem-

ical burns may occur.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Result	:	Corrosive
Method	:	OECD Test Guideline 405
Remarks	:	May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Product:

Remarks	:	For the major component(s): Has caused allergic skin reactions in humans. Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s). Ethylenediamine. Diethylenetriamine. Piperazine. Aminoethylethanolamine (AEEA).
Remarks	:	For respiratory sensitization: No relevant data found.

Components:

Triethylenetetramine mixture:

Assessment	:	May cause sensitization by skin contact.
Remarks	:	Has caused allergic skin reactions in humans. Has demonstrated the potential for contact allergy in mice. Has caused allergic skin reactions when tested in guinea pigs. Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s). The similar material(s) is/are: Ethylenediamine (EDA). Diethylenetriamine. Piperazine. Aminoethylethanolamine (AEEA).
Remarks	:	For respiratory sensitization: No relevant data found.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Assessment	:	The product is a skin sensitizer, sub-category 1A.
Remarks	:	Has demonstrated the potential for contact allergy in mice.
Remarks	:	For respiratory sensitization:

No data available

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Remarks: For the major component(s):
In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Components:

Triethylenetetramine mixture:

Genotoxicity in vitro : Remarks: In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Animal genetic toxicity studies were negative.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Genotoxicity in vitro : Remarks: In vitro genetic toxicity studies were negative.

Carcinogenicity

Not classified based on available information.

Product:

Remarks : For the major component(s):
Did not cause cancer in laboratory animals.

Components:

Triethylenetetramine mixture:

Remarks : Did not cause cancer in laboratory animals.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility : Remarks: No relevant data found.

Effects on fetal development : Remarks: Laboratory animals that were fed exaggerated doses of Triethylenetetraamine(TETA) showed adverse fetal effects that were believed to be associated with an observed copper deficiency.
Exposures having no effect on the mother should have no

effect on the fetus.

Components:

Triethylenetetramine mixture:

Effects on fertility : Remarks: No relevant data found.

Effects on fetal development : Remarks: Laboratory animals that were fed exaggerated doses of Triethylenetetraamine(TETA) showed adverse fetal effects that were believed to be associated with an observed copper deficiency.
Exposures having no effect on the mother should have no effect on the fetus.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Effects on fertility : Remarks: Screening studies suggest that this material does not affect reproduction.

Effects on fetal development : Remarks: Screening studies in animals suggest that this material does not affect fetal development.

STOT-single exposure

Not classified based on available information.

Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Components:

Triethylenetetramine mixture:

Assessment : Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Product:

Remarks : For the major component(s):
In animals, effects have been reported on the following organs:
Liver.

Components:

Triethylenetetramine mixture:

Remarks : In animals, effects have been reported on the following organs:
Lung.

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aspiration toxicity

Not classified based on available information.

Product:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Components:

Triethylenetetramine mixture:

Based on physical properties, not likely to be an aspiration hazard.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Triethylenetetramine mixture:

Toxicity to fish : Remarks: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 20 mg/l
End point: Growth rate inhibition
Exposure time: 72 h
Test Type: semi-static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.9 mg/l
End point: number of offspring
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211 or Equivalent

Toxicity to microorganisms : EC50 (Bacteria): 680 mg/l
Exposure time: 16 h

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Toxicity to fish : Remarks: Material is highly toxic to fish on an acute basis (LC50 between 0.1 and 1.0 mg/L).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.16 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203 or Equivalent

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability

Components:

Triethylenetetramine mixture:

Biodegradability : Remarks: Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%).

Result: Not biodegradable.
Biodegradation: 0 %
Exposure time: 20 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

Biochemical Oxygen Demand (BOD) : 5.000 %
Incubation time: 5 d

2.5 - 11 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 1.94 mg/mg

ThOD : 3.40 mg/mg

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Biodegradability : Remarks: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Fail

Bioaccumulative potential

Components:

Triethylenetetramine mixture:

Partition coefficient: n-octanol/water	:	log Pow: -2.65 Method: Estimated. Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Partition coefficient: n-octanol/water	:	Remarks: No relevant data found.

Mobility in soil

Components:

Triethylenetetramine mixture:

Distribution among environmental compartments	:	Koc: 4.1 - 310 Method: Estimated. Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Distribution among environmental compartments	:	Remarks: No relevant data found.

Other adverse effects

Components:

Triethylenetetramine mixture:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE

MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL.
THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information.
All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.
Regulations may vary in different locations.
Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.
DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.
FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1760
Proper shipping name	:	CORROSIVE LIQUID, N.O.S. (Triethylenetetramine mixture, Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer)
Class	:	8
Packing group	:	II
Labels	:	8

IATA-DGR

UN/ID No.	:	UN 1760
Proper shipping name	:	Corrosive liquid, n.o.s. (Triethylenetetramine mixture, Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer)
Class	:	8
Packing group	:	II
Labels	:	Corrosive
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG-Code

UN number	:	UN 1760
Proper shipping name	:	CORROSIVE LIQUID, N.O.S. (Triethylenetetramine mixture, Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer)
Class	:	8
Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	yes
Remarks	:	Stowage category B

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1760
Proper shipping name	:	Corrosive liquids, n.o.s. (Triethylenetetramine mixture, Epichlorohydrin, Bisphenol A and Triethylenetetramine Polymer)
Class	:	8
Packing group	:	II
Labels	:	CORROSIVE
ERG Code	:	154
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Serious eye damage or eye irritation
Respiratory or skin sensitization
Acute toxicity (any route of exposure)
Skin corrosion or irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Triethylenetetramine mixture	112-24-3

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

International Regulations

Montreal Protocol	:	Not applicable
Rotterdam Convention (Prior Informed Consent)	:	Not applicable
Stockholm Convention (Persistent Organic Pollutants)	:	Not applicable

The ingredients of this product are reported in the following inventories:

TCSI	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.
TSCA	:	All substances listed as active on the TSCA Inventory or are not required to be listed.
AICS	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.
DSL	:	All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.
ENCS	:	not determined
ISHL	:	not determined
KECI	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.
PICCS	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.
IECSC	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.
NZIoC	:	not determined
CH INV	:	All intentional components are listed on the inventory, are exempt, or are supplier certified.

TSCA list

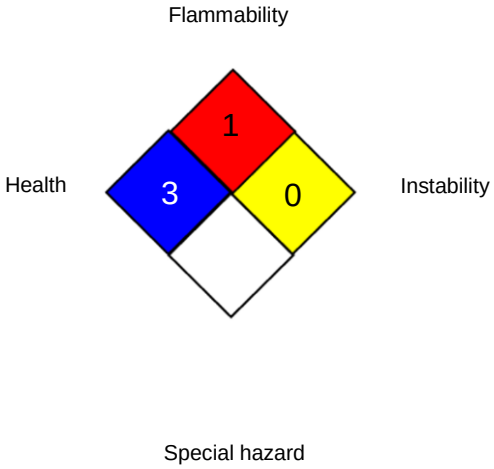
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
US WEEL / TWA	:	8-hr TWA

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG -

United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 06-10-2021

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