



Material Safety Data Sheet

BLUE CUBE OPERATIONS LLC

Product Name: D.E.H.™ 512 Epoxy Curing Agent

Issue Date: 04/16/2015

Print Date: 01 Jun 2015

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 precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

D.E.H.™ 512 Epoxy Curing Agent

COMPANY IDENTIFICATION

BLUE CUBE OPERATIONS LLC
2030 DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

1 800 424 9300

Local Emergency Contact:

800-424-9300

2. Hazards Identification

Emergency Overview

Color: Yellow

Physical State: Liquid.

Odor: Amine.

Hazards of product:

DANGER! Causes severe eye burns. Causes severe skin burns. Causes burns of the mouth and throat. May cause allergic skin reaction. Harmful if inhaled; sprayed materials under high pressure produce harmful effects. May be harmful if absorbed through skin. May be harmful if swallowed. Aspiration hazard. Can enter lungs and cause damage. Evacuate area. Keep upwind of spill. Highly toxic to fish and/or other aquatic organisms.

OSHA Hazard Communication Standard

® ™ TRADEMARK OF THE DOW CHEMICAL COMPANY ("DOW") OR AN AFFILIATED COMPANY OF DOW

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

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

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

Skin Absorption: Prolonged or widespread skin contact may result in absorption of potentially harmful amounts.

Skin Sensitization: A component in this mixture has caused allergic skin reactions in humans. Contains component(s) which have caused allergic skin sensitization 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: Triethylenetetramine (TETA). Piperazine.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation. Vapor from heated material or mist may cause serious adverse effects, even death.

Ingestion: Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

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

Effects of Repeated Exposure: Based on information for component(s): In animals, effects have been reported on the following organs: Kidney. Liver. Testes.

Birth Defects/Developmental Effects: For the minor component(s): Has caused birth defects in laboratory animals.

Reproductive Effects: For the minor component(s): Has been toxic to the fetus in laboratory animal tests. In a three-generation reproduction study in rats, nonylphenol did not interfere with standard reproductive parameters. However, some additional endpoints which are considered markers of potential reproductive toxicity were affected at higher doses that produced systemic toxicity to the parent animals.

3. Composition Information

Component	CAS #	Amount
4-Nonylphenol, branched	84852-15-3	40.0 - 70.0 %
Aminoethylpiperazine	140-31-8	40.0 - 70.0 %
Aminoethylethanolamine	111-41-1	< 3.0 %

4. First-aid measures

Description of first aid measures

General advice: 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.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose of leather items such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

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.

Ingestion: 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) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. 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.

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.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

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: Phenolic compounds. Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: 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.

Advice for firefighters

Fire Fighting Procedures: 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. 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 Firefighters: 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.

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.

7. Handling and Storage

Handling

General Handling: Do not get in eyes, on skin, on clothing. Avoid breathing vapor or mist. Do not swallow. Avoid prolonged contact with eyes, skin and clothing. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a cool, dry place.

Shelf life: Use within	Storage temperature:
24 Months	0 - 30 °C 32 - 86 °F

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Aminoethylethanolamine	Dow IHG	TWA	0.05 mg/m3 SKIN*, D-SEN

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

*Skin notation based upon the possibility that the vapor limit alone may not be protective for pregnant women. There is the potential for absorption of Aminoethylethanolamine from the skin at levels that may seriously affect the fetus.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin 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.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). 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.

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, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained

breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance

Physical State	Liquid.
Color	Yellow
Odor	Amine.
Odor Threshold	No test data available
pH	Not applicable
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	221 °C (430 °F) <i>Literature</i> Aminoethylpiperazine (AEP)..
Flash Point - Closed Cup	112 °C (234 °F) <i>Literature</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Vapor Pressure	< 0.01 kPa @ 20 °C <i>Literature</i> Aminoethylpiperazine (AEP).
Vapor Density (air = 1)	No test data available
Specific Gravity (H₂O = 1)	1 <i>Literature</i>
Solubility in water (by weight)	Slightly soluble
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	150 - 300 cps @ 25 °C <i>ASTM D445</i>
Kinematic Viscosity	No test data available

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

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. Nitrites. Avoid contact with metals such as: Brass. Bronze. Copper. 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. Phenolics. Volatile amines.

11. Toxicological Information**Acute Toxicity****Ingestion**

Single dose oral LD50 has not been determined. Estimated. LD50, rat > 1,000 mg/kg

Dermal

The dermal LD50 has not been determined. Estimated. LD50, rabbit > 1,000 mg/kg

Inhalation

As product: The LC50 has not been determined.

Eye damage/eye irritation

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

Skin corrosion/irritation

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

Sensitization**Skin**

A component in this mixture has caused allergic skin reactions in humans. Contains component(s) which have caused allergic skin sensitization 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: Triethylenetetramine (TETA). Piperazine.

Repeated Dose Toxicity

Based on information for component(s): In animals, effects have been reported on the following organs: Kidney. Liver. Testes.

Chronic Toxicity and Carcinogenicity

No relevant data found.

Developmental Toxicity

For the minor component(s): Has caused birth defects in laboratory animals. Contains component(s) which did not cause birth defects or any other fetal effects in lab animals, even at exposure levels having an adverse effect on the mother.

Reproductive Toxicity

For the minor component(s): Has been toxic to the fetus in laboratory animal tests. In a three-generation reproduction study in rats, nonylphenol did not interfere with standard reproductive parameters. However, some additional endpoints which are considered markers of potential reproductive toxicity were affected at higher doses that produced systemic toxicity to the parent animals.

Genetic Toxicology

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains a component(s) which were negative in in vitro genetic toxicity studies. The data presented are for the following material: Aminoethylpiperazine (AEP). Animal genetic toxicity studies were inconclusive. Contains component(s) which were negative in animal genetic toxicity studies.

12. Ecological Information**Toxicity****Data for Component: 4-Nonylphenol, branched**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 0.135 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), 48 h, immobilization: 0.14 mg/l

Aquatic Plant Toxicity

ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 96 h: 0.41 mg/l

Fish Chronic Toxicity Value (ChV)

Pimephales promelas (fathead minnow), flow-through test, 33 d, survival, NOEC:0.0074 mg/l, LOEC:0.014 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.024 mg/l

Data for Component: **Aminoethylpiperazine**

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).

Fish Acute & Prolonged Toxicity

LC50, Pimephales promelas (fathead minnow), static test, 96 h: 2,190 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 58 mg/l

Aquatic Plant Toxicity

ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 72 h: > 1,000 mg/l

Data for Component: **Aminoethylethanolamine**

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).

Fish Acute & Prolonged Toxicity

LC50, Pimephales promelas (fathead minnow), 96 h: 640 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 22 mg/l

Aquatic Plant Toxicity

ErC50, Desmodesmus subspicatus (green algae), Growth rate inhibition, 72 h: 353.6 mg/l

Toxicity to Micro-organisms

EC50; Bacteria, 16 h: > 5,000 mg/l

Persistence and DegradabilityData for Component: **4-Nonylphenol, branched**

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
48.2 %	35 d	OECD 301B Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
5.168E-11 cm ³ /s	0.207 d	Estimated.

Theoretical Oxygen Demand: 3.29 mg/mgData for Component: **Aminoethylpiperazine**

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

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 301F Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.14E-10 cm ³ /s	0.05 d	Estimated.

Chemical Oxygen Demand: 1.84 mg/mg**Theoretical Oxygen Demand:** 3.34 mg/mgData for Component: **Aminoethylethanolamine**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
> 97 %	28 d	OECD 301F Test	pass

Theoretical Oxygen Demand: 2.77 mg/mg

Bioaccumulative potentialData for Component: **4-Nonylphenol, branched**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient, n-octanol/water (log Pow): 3.8 - 4.77 Measured

Bioconcentration Factor (BCF): 271; Fish; Measured

Data for Component: **Aminoethylpiperazine**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): -1.48 Measured

Data for Component: **Aminoethylethanolamine**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): -1.46 Measured

Bioconcentration Factor (BCF): < 3.7; Cyprinus carpio (Carp); Measured

Mobility in soilData for Component: **4-Nonylphenol, branched**

Mobility in soil: Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.

Henry's Law Constant (H): 4.30E-06 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
76.05 %	18.40 %	< 0.01 %	2.86 %	2.68 %

Data for Component: **Aminoethylpiperazine**

Mobility in soil: Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient, soil organic carbon/water (Koc): 37,000 Estimated.

Henry's Law Constant (H): 9.3E-09 atm*m3/mole; 20 °C Estimated.

Data for Component: **Aminoethylethanolamine**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50)., Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient, soil organic carbon/water (Koc): 3.5 Estimated.

Henry's Law Constant (H): 1.11E-08 Pa*m3/mole.; 25 °C Estimated.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. 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. 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. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: CORROSIVE LIQUID, N.O.S.

Technical Name: Nonylphenol, AMINOETHYLPIPERAZINE

Hazard Class: 8 **ID Number:** UN1760 **Packing Group:** PG II

DOT Bulk

Proper Shipping Name: CORROSIVE LIQUID, N.O.S.

Technical Name: Nonylphenol, AMINOETHYLPIPERAZINE

Hazard Class: 8 **ID Number:** UN1760 **Packing Group:** PG II

IMDG

Proper Shipping Name: CORROSIVE LIQUID, N.O.S.

Technical Name: Nonylphenol, AMINOETHYLPIPERAZINE

Hazard Class: 8 **ID Number:** UN1760 **Packing Group:** PG II

EMS Number: F-A,S-B

Marine pollutant: Yes

ICAO/IATA

Proper Shipping Name: CORROSIVE LIQUID, N.O.S.

Technical Name: Nonylphenol, AMINOETHYLPIPERAZINE

Hazard Class: 8 **ID Number:** UN1760 **Packing Group:** PG II

Cargo Packing Instruction: 855

Passenger Packing Instruction: 851

Additional Information

MARINE POLLUTANT (Nonylphenol)

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard No

Reactive Hazard No

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Aminoethylpiperazine	140-31-8	<= 70.0 %

Aminoethylethanolamine

111-41-1

< 3.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information**Recommended Uses and Restrictions****Identified uses**

Hardener for epoxy resin.

Revision

Identification Number: 1027569 / A476 / Issue Date 04/16/2015 / Version: 2.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

BLUE CUBE OPERATIONS LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.