

Section 1: Identification


PRODUCT IDENTIFIER: ULTRATHIN 2 EPOXY HARDENER

CHEMICAL FAMILY: Diethylenetriamine: CAS Number – 111-40-0

EMERGENCY PHONE: CHEMTREC 800-424-9300 (US) Day or night
 Customer No. 16568

MANUFACTURER: PACE Technologies
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Section 2: Hazard(s) Identification

GHS CLASIFICATION:	Acute toxicity oral, Category 4, H302 Acute toxicity inhalation, Category 2, H330 Acute toxicity dermal, Category 4, H312 Skin corrosion, Category 1B, H314 Skin sensitization, Category 1, H317 Serious eye damage, Category 1, H318 Specific target organ toxicity - single exposure, Category 2, [nervous system], H371 Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335
PICTOGRAM(s):	
SIGNAL WORD:	Danger
HAZARD STATEMENTS:	Hazard Statement(s): H302-Harmful if swallowed H312 – Harmful in contact with skin H314-Causes severe skin burns and eye damage H317-May cause an allergic skin reaction H318-Causes serious eye damage H330-Fatal if inhaled H335-May cause respiratory irritation H371-May cause damage to organs
PRECAUTIONARY STATEMENTS:	Precautionary Statement(s): Preventions: P260- Do not breathe

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.
P271-Use only outdoors or in a well-ventilated area
P272-Contaminated work clothing should not be allowed out of the workplace
P280- Wear protective gloves/protective clothing/eye protection/face protection.
P284- P403+P233=Store in a well-ventilated place. Keep container tightly closed.

Response:

P301+312- IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.
P301+P330+P331- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+352- IF ON SKIN: wash with plenty of soap and water.
P304+P340- IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P305+P351+P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P311 – IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P310- Immediately call a POISON CENTER or doctor/physician.
P312- Call a POISON CENTER or doctor/physician if you feel unwell.
P320- Specific treatment is urgent (Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention).
P321- Specific treatment (Immediately flush eyes with plenty of water for 15 minutes while holding eyelids open. Rinse continuously with water while on way to get medical attention).
P322- Specific measures (Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15-minutes. Use soap if available or follow by washing with soap and water).
P333+P313-IF SKIN irritation or rash occurs: Get medical advice/attention.
P330- Rinse mouth.
P363- Wash contaminated clothing before reuse.

Storage:

P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P405-Store locked up

Disposal:

P501- Dispose of contents/container to Federal, State and Local Regulations.

Section 3: Composition/Information on Ingredients

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>%</u>
DIETHYLENETRIAMINE	111-40-0	100%

Section 4: First-Aid Measures

- INHALATION:** Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.
- SKIN CONTACT:** Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15-minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned. Get medical attention.
- EYE CONTACT:** Immediately flush eyes with plenty of water for 15 minutes while holding eyelids open. Rinse continuously with water while on way to get medical attention.
- INGESTION:** Do not induce vomiting. Give one glass of water unless victim is drowsy, convulsing, or unconscious. Seek medical attention immediately.

NOTES TO PHYSICIAN

- SYMPTOMS:** Irritation as noted above. Lung damage (scarring, bronchitis, emphysema) may be evidenced by shortness of breath, especially on exertion, and may be accompanied by chronic cough. Skin sensitization (allergy) may be evidenced by rashes, especially hives.

Section 5: Fire-Fighting Measures

- SUITABLE EXTINGUISHING MEDIA:** Use water fog, "alcohol foam", dry chemical or carbon dioxide.
Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.
- SPECIFIC HAZARDS DURING FIRE FIGHTING:** Material will not burn unless preheated. Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. Nitrogen oxides and other potentially hazardous nitrogen-containing compounds may be released upon combustion.
Cool fire exposed containers with water.
- SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:** Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus.

Section 6: Accidental Release Measures

PERSONNEL PRECAUTIONS: Corrosive.

Prevent all bodily contact with spilled material.
Shut off leaks, if possible without personal risk.
Remove ignition sources.

**ENVIRONMENTAL
PRECAUTIONS:**

Dike and contain.
Contain run-off and dispose of properly.
Prevent from entering into drains, ditches or rivers.

**CLEAN-UP METHODS –
SMALL SPILLAGE:**

Take up with an absorbent material and place in non-leaking
containers.
Seal tightly for proper disposal.

**CLEAN-UP METHODS –
LARGE SPILLAGE:**

Remove with vacuum trucks or pump to storage/salvage vessels.
Soak up residue with an absorbent such as clay, sand or other
suitable material; place in non-leaking containers for proper disposal.
Flush area with water to remove trace residue.

ADDITIONAL ADVICE:

Notify authorities if any exposures to the general public or
environment occurs or is likely to occur.
See Section 13 for information on disposal.

Section 7: Handling and Storage

**ADIVCE ON SAFE
HANDLING:**

Do not pressurize drum containers to empty them. Heating this curing agent
above 300 Deg. F in the presence of air may cause slow oxidative decomposition;
above 500 Deg. F, polymerization may occur. Some epoxy resins can produce
exothermic reactions which in large masses can cause runaway polymerization
and charring of the reactants. Fumes and vapors from these thermal and chemical
decompositions vary widely in composition and toxicity. Do not breathe fumes.
Use a NIOSH-approved respirator as required to prevent overexposure. In accord
with 29 CFR.1910.134, use either an atmosphere-supplying respirator or an air-
purifying respirator for organic vapors.

STORAGE:

**REQUIREMENTS
FOR STORAGE
AREAS AND
CONTAINERS:**

Store in a cool, dry place with adequate ventilation. Keep away from open flames
and high temperatures.

Section 8: Exposure Controls/ Personal Protection

PROTECTIVE MEASURES: Wear appropriate respirator and full-body protective clothing.

ENGINEERING MEASURES: Use ventilation as required to control vapor concentrations. Eye wash fountains and safety showers should be available for emergency use.

EYE PROTECTION: Do not get in eyes.
Wear chemical goggles if there is potential contact with eyes.

SKIN AND BODY PROTECTION: Do not get on skin, on clothing.
Wear chemical-resistant protective clothing such as gloves, outer clothing or apron, overshoes and a face-shield suitable to potential exposure.

RESPIRATORY PROTECTION: Do not breathe vapors or mists.
Use a NIOSH-approved respirator as required to prevent overexposure.
In accord with 29 CFR 1910.134
Use either a full-face, atmosphere-supplying respirator or air-purifying respirator for organic vapors.
Avoid breathing vapors which may be produced under some conditions such as heating or applications of uncured material in large surface areas (e.g., flooring and painting).
Avoid breathing aerosols and mists which may be formed by various methods of application.

EXPOSURE GUIDELINES:

Components with workplace control parameters	Regulation	Exposure time	Value	Remarks
DIETHYLENTRIAMINE	ACGIH	Time Weighted Average (TWA):	1 ppm	
	ACGIH	Skin designation:		Can be absorbed through the skin.
	OSHA Z1A	Time Weighted Average (TWA):	1 ppm 4 mg/m3	

Section 9: Physical and Chemical Properties

FORM: Liquid
COLORS: Colorless

BOILING POINT: 199 deg. C (390 deg F) at 760 mm/Hg

VAPOR PRESSURE:	<1.33 mbar at 20 deg. C (68 deg F)
RELATIVE VAPOR DENSITY:	>1 [Air=1]
SOLUBILITY IN WATER:	Completely miscible.
ODOR:	Amine
BOILING POINT:	199 °C (390 °F)
FLASH POINT:	Pensky-Martens Closed Cup: 101.67 °C (215.01 °F) (ASTM D 93)
RELATIVE DENSITY:	0.95
FLASH POINT:	101.67 deg C (215.01 deg F) (Pensky-Martens)
LOWER EXPLOSION LIMIT:	1.9 % (V)
UPPER EXPLOSION LIMIT:	11.9 % (V)
OTHER PHYSICO-CHEMICAL PROPERTIES:	The above properties are typical values only and do not constitute a specification.

Section 10: Stability and Reactivity

CONDITIONS TO AVOID:	Heat, flames and sparks.
MATERIALS TO AVOID:	Can react vigorously with strong oxidizing agents, strong Lewis or mineral acid, and strong mineral and organic bases, especially primary and secondary aliphatic amines. Reacts with considerable heat release with some curing agents.
HAZARDOUS DECOMPOSITION PRODUCTS:	Nitrogen oxides, carbon monoxide and unidentified organic compounds may be formed during combustion.
HAZARDOUS REACTIONS:	Stable under normal use conditions. Hazardous polymerization will not occur.

Section 11: Toxicological Information

ACUTE TOXICITY:

Components	Result	Species	Dose	Exposure
DIETHYLENETRIAMINE	LD50 Oral	Rat	1080 mg/kg	-
	LD50 Dermal	Rabbit	1090 mg/kg	-

Conclusion / Summary: Not available

IRRITATION / CORROSION:

Components	Result	Species	Score	Exposure
DIETHYLENETRIAMINE	Skin-Moderate irritant	Rabbit		-

Conclusion / Summary:

Skin: Not available

Eyes: Not available

Respiratory: Not available

POTENTIAL HEALTH HAZARD:

INHALATION:	Fatal if inhaled. May cause damage to organs following a single exposure if inhaled. May cause respiratory irritation.
SKIN:	Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
EYES:	Causes serious eye damage.
INGESTION:	Harmful if swallowed. May cause damage to organs following a single exposure if swallowed.
AGGRAVATED MEDICAL CONDITIONS:	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:

INHALATION:	Adverse symptoms may include the following: respiratory tract irritation coughing.
SKIN:	Adverse symptoms may include the following: pain or irritation redness blistering may occur
EYES:	Adverse symptoms may include the following: pain watering redness
INGESTION:	Adverse symptoms may include the following: stomach pains

Section 12: Ecological Information

IRRITATION / CORROSION:

Product Ingredient Name	Result	Species	Exposure
2,2'-iminodiethylamine	Acute LC50 16 mg/l	Aquatic invertebrates. Daphnia	48 h
	Acute LC50 53,500 µg/l Fresh water	Aquatic invertebrates.	48 h
	Acute EC50 1,164 mg/l	Aquatic plants - Green algae	72 h
	Acute EC50 345,600 µg/l Fresh water	Aquatic plants - Algae	96 h

IRRITATION / CORROSION:

Product Ingredient Name	LogPow	BCF	Potential
2,2'-iminodiethylamine	-5.58	0.65 2.80-6.30	low

Section 13: Disposal Considerations

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14: Transportation Information

DOT	UN/NA-No. Class Packing Group ERG No. Proper shipping name Limited Quantity Shipments	2079 8 II 154 DIETHYLENETRIAMINE <1 L
IMDG	UN/NA-No.	2079

	Class Packing Group EmS Proper shipping name	8 II F-A S-B DIETHYLENETRIAMINE
IATA Cargo	UN/NA-No. Class Packing Group ERG No. Proper shipping name	2079 8 II 154 DIETHYLENETRIAMINE

Section 15: Regulatory Information

United States U.S. Federal regulations	<p>United States - TSCA 12(b) - Chemical export notification: None required. United States - TSCA 5a2 - Final significant new use rules: Not listed United States - TSCA 5a2 - Proposed significant new use rules: Not listed United States - TSCA 5(e) - Substances consent order: Not listed SARA 311/312 Classification - ACUTE TOXICITY, oral, Category 4</p> <p>SARA 311/312 Classification - ACUTE TOXICITY, dermal, Category 4</p> <p>SARA 311/312 Classification - ACUTE TOXICITY, inhalation, Category 2</p> <p>SARA 311/312 Classification - SKIN CORROSION, Category 1B</p> <p>SARA 311/312 Classification - SERIOUS EYE DAMAGE, Category 1</p> <p>SARA 311/312 Classification - SKIN SENSITISATION, Category 1</p> <p>SARA 311/312 Classification - SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE, nervous system, Category 2</p> <p>SARA 311/312 Classification - SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE, Respiratory tract irritation, Category 3</p> <p>SARA 311/312 Classification - Not applicable</p>
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California Prop. 65: This product does not require a Safe Harbor warning under California Prop. 65.

United States inventory (TSCA 8b):	All components are active or exempted.
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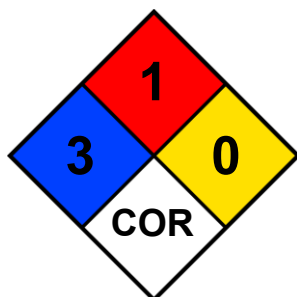
International regulations:

International lists	<p>Australia inventory (AICS): All components are listed or exempted.</p> <p>Canada inventory: All components are listed or exempted.</p> <p>Japan inventory: All components are listed or exempted.</p> <p>China inventory (IECSC): All components are listed or exempted.</p>
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Korea inventory (KECI): All components are listed or exempted.
New Zealand Inventory (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
United States inventory (TSCA 8b): All components are active or exempted.
Taiwan inventory (TCSI): All components are listed or exempted.

Section 16: Other Information

16.1 NFPA 704



Top, Flammability: 1 – Slight Hazard

Left, Health Hazard: 3 – Severe Hazard

Right, Reactivity: 0 – Minimal Hazard

Bottom, Special Notice: COR- Corrosive

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