

# LMK Epoxy Hardener

## SAFETY DATA SHEET



MAINLINES | LATERALS | MANHOLES | GASKET SEALS | EQUIPMENT

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# Safety Data Sheet

Version 5.2  
Revision Date 05/27/2015

SDS Number 300000008547  
Print Date 06/06/2015

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Epoxy Hardener  
Synonyms : ANCAMIDE ® 501 Curing Agent  
Product Use Description : Curing Agent, Epoxy  
Manufacturer/Importer/Distributor : LMK Technologies  
1779 Chessie Lane  
Ottawa, IL 61350  
  
Telephone : 815.433.1275  
  
Emergency telephone number (24h) : 800.424.9300  
703.527.3887

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## 2. HAZARDS IDENTIFICATION

### GHS classification

Acute toxicity - Inhalation Category 3  
Skin corrosion - Category 1B  
Serious Eye Damage - Category 1  
Skin sensitization - Category 1  
Reproductive toxicity - Category 2

### GHS label elements

#### Hazard pictograms/symbols



Signal Word: Danger

#### Hazard Statements:

H314:Causes severe skin burns and eye damage.

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H317:May cause an allergic skin reaction.  
H331:Toxic if inhaled.  
H361:Suspected of damaging fertility or the unborn child

## Precautionary Statements:

Prevention : P201:Obtain special instructions before use.  
P202:Do not handle until all safety precautions have been read and understood.  
P261:Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264:Wash hands thoroughly after handling.  
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.  
P281:Use personal protective equipment as required.

Response : P301+P330+P331 :IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 :IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
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.  
P308+P313 :IF exposed or concerned: Get medical advice/attention.  
P310 :Immediately call a POISON CENTRE/doctor.  
P333+P313 :If skin irritation or rash occurs: Get medical advice/attention.  
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:Disposal of contents/container to be specified in accordance with regulations.

## Hazards not otherwise classified

This product contains a component that is toxic by inhalation when aerosolized or sprayed. Please refer to Section 11 of the SDS for toxicity information. Review the toxicity information against your intended use. If product is not being aerosolized or sprayed, the inhalation toxicity may not be applicable.

May cause sensitization by skin contact.

Corrosive

Very toxic by inhalation.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components         | CAS Number | Concentration (Weight) |
|--------------------|------------|------------------------|
| Diethylenetriamine | 111-40-0   | < 15 %                 |

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|                                       |            |         |
|---------------------------------------|------------|---------|
| Phenol, 4,4'-(1-methylethylidene)bis- | 80-05-7    | < 10 %  |
| Tetraethylenepentamine                | 112-57-2   | < 2.5 % |
| Tofa, reaction products with TEPA     | 68953-36-6 | > 25%   |

CHEMICAL FAMILY: Amidoamine.

## 4. FIRST AID MEASURES

- General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact : Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour.
- Skin contact : Take off contaminated clothing and shoes immediately. Cover wound with sterile dressing. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Flush immediately with copious amounts of water.
- Ingestion : Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Prevent aspiration of vomit. Turn victim's head to the side.
- Inhalation : Move to fresh air.
- Most important symptoms/effects - acute and delayed : Asthma. Eye disease. Kidney disorders. Liver disorders. Skin disorders and Allergies.

## 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam.  
Carbon dioxide (CO<sub>2</sub>).  
Dry chemical.  
Dry sand.  
Limestone powder.
- Specific hazards : Ammonia gas may be liberated at high temperatures. In case of incomplete combustion an increased formation of oxides of nitrogen (NO<sub>x</sub>) is to be expected. Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.
- Special protective equipment for fire-fighters : Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if

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necessary.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations., Do not allow run-off from fire fighting to enter drains or water courses.

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## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures : Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.

Environmental precautions : Do not allow spill to enter into sewers or waterways. Use appropriate containment to avoid environmental contamination. Construct a dike to prevent spreading.

Methods for cleaning up : Approach suspected leak areas with caution. Contact Air Products' Emergency Response Center for advice. Place in appropriate chemical waste container.

Additional advice : Evacuate area and do not approach spilled product . If possible, stop flow of product.

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## 7. HANDLING AND STORAGE

### Handling

Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Do not breathe spray. Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Use personal protective equipment. When using, do not eat, drink or smoke.

### Storage

Do not store near acids. Keep away from oxidizers. Keep containers tightly closed in a dry, cool and well-ventilated place.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering measures

Provide readily accessible eye wash stations and safety showers.

Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

### Personal protective equipment

Respiratory protection : During spraying, wear suitable respiratory equipment.

Hand protection : Butyl-rubber  
Nitrile rubber.  
Neoprene gloves.  
PVC disposable gloves

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Impervious gloves.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Full face shield with goggles underneath.

Skin and body protection : Impervious clothing.  
Rubber or plastic boots.  
Slicker Suit.

Environmental exposure controls : Do not allow spill to enter into sewers or waterways. Use appropriate containment to avoid environmental contamination.

Special instructions for protection and hygiene : Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash hands at the end of each workshift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

## Exposure limit(s)

|                        |   |       |         |
|------------------------|---|-------|---------|
| Diethylenetriamine     | Time Weighted Average (TWA): ACGIH                                      | 1 ppm | -       |
| Diethylenetriamine     | Recommended exposure limit (REL): NIOSH                                 | 1 ppm | 4 mg/m3 |
| Diethylenetriamine     | Time Weighted Average (TWA): OSHA Z1A                                   | 1 ppm | 4 mg/m3 |
| Diethylenetriamine     | Time Weighted Average (TWA) Permissible Exposure Limit (PEL): US CA OEL | 1 ppm | 4 mg/m3 |
| Diethylenetriamine     | Time Weighted Average (TWA): TN OEL                                     | 1 ppm | 4 mg/m3 |
| Tetraethylenepentamine | Time Weighted Average (TWA): WEEL                                       | 1 ppm | 5 mg/m3 |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid. Amber.

Odor : Ammoniacal.

Odor threshold : No data available.

pH : Alkaline.

Melting point/range : No data available.

Boiling point/range : > 374 °F (> 190 °C)

Flash point : 259 °F (126.11 °C)

Evaporation rate : No data available.

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|  |  |
|--|--|
| Flammability (solid, gas)                | : Not applicable.  |
| Upper/lower explosion/flammability limit | : Not applicable.  |
| Vapor pressure                           | : < 5.17 mmHg at 70 °F (21 °C)   |
| Water solubility                         | : Slightly soluble.  |
| Relative vapor density                   | : Not applicable.  |
| Relative density                         | : 0.98 (water = 1)   |
| Partition coefficient (n-octanol/water)  | : No data available.   |
| Auto-ignition temperature                | : No data available.   |
| Decomposition temperature                | : No data available.   |
| Viscosity                                | : No data available.   |
| Molecular Weight                         | : No data available.   |
| Density                                  | : 61.179 lb/ft <sup>3</sup> (0.98 g/cm <sup>3</sup> ) at 70 °F (21 °C) |

## 10. STABILITY AND REACTIVITY

|                                  |  |
|----------------------------------|--|
| Chemical Stability               | : Stable under normal conditions.  |
| Conditions to avoid              | : No data available.   |
| Materials to avoid               | : Reactive metals (e.g. sodium, calcium, zinc etc.).<br>Materials reactive with hydroxyl compounds.<br>CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.<br>Nitrous acid and other nitrosating agents.<br>Organic acids (i.e. acetic acid, citric acid etc.).<br>Mineral acids.<br>Sodium hypochlorite.<br>Oxidizing agents.<br>Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.<br>Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. |
| Hazardous decomposition products | : Nitric acid.<br>Ammonia<br>Nitrogen oxides (NO <sub>x</sub> ).   |

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Nitrogen oxide can react with water vapors to form corrosive nitric acid.  
Carbon monoxide.  
Carbon dioxide (CO<sub>2</sub>).  
Aldehydes  
Flammable hydrocarbon fragments.  
Nitrosamine.  
Chlorine

Possibility of hazardous Reactions/Reactivity : No data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Likely routes of exposure

Effects on Eye : Causes eye burns. May cause blindness.

Effects on Skin : Causes skin burns.

Inhalation Effects : This product contains a component that is toxic by inhalation when aerosolized or sprayed. Please refer to Section 11 of the SDS for toxicity information. Review the toxicity information against your intended use. If product is not being aerosolized or sprayed, the inhalation toxicity may not be applicable. Inhalation of aerosol may cause irritation to the upper respiratory tract. Can cause severe eye, skin and respiratory tract burns. Highly toxic by inhalation.

Ingestion Effects : If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Symptoms : No data available.

#### Acute toxicity

Acute Oral Toxicity : LD50 : 3,990 mg/kg Species : Rat.

Inhalation : No data is available on the product itself.

Inhalation - Components  
Diethylenetriamine LC50 (4 h) : > 0.07 - < 0.3 mg/l Species : Rat.

Acute Dermal Toxicity : LD50 : > 2,000 mg/kg Species : Rabbit.  
Method : Estimated.

Skin corrosion/irritation : Severe skin irritation., Corrosive to the skin of a rabbit.

Serious eye damage/eye irritation : Severe eye irritation.



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Sensitization. : May cause sensitization by skin contact., Sensitization has occurred in laboratory animals after repeated exposures.

## Chronic toxicity or effects from long term exposures

Carcinogenicity : No data available.

Reproductive toxicity : No data is available on the product itself.

Germ cell mutagenicity : The product or a component may be mutagenic, the data is inconclusive. This product or a component was mutagenic in a bacterial assay. This product or a component did not cause chromosome damage in an in vivo micronucleus assay.

Specific target organ systemic toxicity (single exposure) : No data available.

Specific target organ systemic toxicity (repeated exposure) : No data available.

Aspiration hazard : No data available.

## Delayed and Immediate Effects and Chronic Effects from Short and Long Term Exposure

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. May cause allergic skin reaction., This product may cause adverse reproductive effects. Asthma., Eye disease., Kidney disorders., Liver disorders., Skin disorders and Allergies.

May impair fertility., Information given is based on data on the components and the toxicology of similar products.

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to other organisms : No data available.

### Persistence and degradability

Biodegradability : No data is available on the product itself.

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

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## 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : The product should not be allowed to enter drains, water courses or the soil; dispose of this material and its container in a safe way. Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

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## 14. TRANSPORT INFORMATION

### DOT

UN/ID No. : UN2735  
Proper shipping name : Amines, liquid, corrosive, n.o.s., (Polyamines, Polyamidoamine)  
Class or Division : 8  
Packing group : II  
Label(s) : 8  
Marine Pollutant : No

### IATA

UN/ID No. : UN2735  
Proper shipping name : Amines, liquid, corrosive, n.o.s., (Polyamines, Polyamidoamine)  
Class or Division : 8  
Packing group : II  
Label(s) : 8  
Marine Pollutant : Yes

\*\* NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

### IMDG

UN/ID No. : UN2735  
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S., (Polyamines, Polyamidoamine)  
Class or Division : 8  
Packing group : II  
Label(s) : 8  
Marine Pollutant : Yes

\*\* NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

### TDG

UN/ID No. : UN2735

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Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S., (Polyamines, Polyamidoamine)  
Class or Division : 8  
Packing group : II  
Label(s) : 8  
Marine Pollutant : Yes

\*\* NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

## Further Information

The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact an Air Products customer service representative.

## 15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA) 12(b) Component(s):

None.

| Country     | Regulatory list | Notification   |
|-------------|-----------------|--|
| USA         | TSCA            | Included on Inventory.   |
| EU          | EINECS          | Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer. |
| Canada      | DSL             | Included on Inventory.   |
| Australia   | AICS            | Included on Inventory.   |
| Japan       | ENCS            | Included on Inventory.   |
| South Korea | ECL             | Included on Inventory.   |
| China       | SEPA            | Included on Inventory.   |
| Philippines | PICCS           | Included on Inventory.   |

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification  
Acute Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level  
Phenol, 4,4'-(1-methylethylidene)bis-

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

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

## 16. OTHER INFORMATION

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## HMIS Rating

Health : 3  
Flammability : 1  
Physical hazard : 0

Prepared by : Quality and Safety Department

Telephone : 815.433.1275

Preparation Date : 06/06/2015

For additional information, please visit [www.lmktechnologies.com](http://www.lmktechnologies.com)

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