

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 01/07/2010

Reviewed on 01/07/2010

## 1 Identification of substance

- **Product details**
- **Trade name:** 40-3905CCL
- **Article number:** Polyamine Formulation
- **Manufacturer/Supplier:**  
Epoxies, Etc.  
21 Starline Way  
Cranston, RI 02921  
USA
- **Information department:** Product safety department.
- **Emergency information:** 800-255-3924



## 2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

112-57-2	tetraethylenepentamine	Danger:  3.2/1B Warning:  3.1.O/4, 3.1.D/4, 3.4.S/1 4.1.C/2	50-100%
872-50-4	N-methyl-2-pyrrolidone	Warning:  3.2/2, 3.3/2A	10-25%

- **Additional information:** Chemical Family: Aliphatic Amine Mixture

## 3 Hazards identification

- **Hazard description:**



Corrosive  
Dangerous for the environment

- **Information pertaining to particular dangers for man and environment:**

Harmful in contact with skin and if swallowed.

Causes burns.

May cause sensitisation by skin contact.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Only for trade users / technical specialists

Keep out of the reach of children.

- **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 1  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 3  
Fire = 1  
Reactivity = 0

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## · GHS label elements

**Danger**

- 3.1/3 - Toxic in contact with skin.
- 3.1/4 - Harmful if swallowed.
- 3.4/1 - May cause an allergic skin reaction.

**Danger**

- 3.2/1B - Causes severe skin burns and eye damage.

**Warning**

- 2.6/4 - Combustible liquid.



- 4.1/2 - Toxic to aquatic life with long lasting effects.

## · Response:

- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*
- 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 or doctor/physician.*
- Remove/Take off immediately all contaminated clothing.*

## · Storage:

- Store locked up.*

## · Disposal:

- Dispose of contents/container in accordance with local/regional/national/international regulations.*

## · Additional information:

- Additional Health Hazards: Corrosive to the eyes, skin, and respiratory tract. May be toxic if absorbed through skin.*

*Inhalation: May cause severe eye, skin, and respiratory tract burns. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of the respiratory system.*

*Eye Contact: Causes eye burns. May cause blindness. Severe eye irritation.*

*Skin contact: Causes skin burns.*

*Ingestion: Causes Severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.*

## 4 First aid measures

### · General information:

- Immediately remove any clothing soiled by the product.*
- Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

### · After inhalation:

- Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.*

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*In case of unconsciousness place patient stably in side position for transportation.*

· **After skin contact:**

*Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain gentle and continuous irrigation with water until the patient receives medical care. If medical care is not promptly available, continue to irrigate (use soap if available) for one hour. Cover the wound with sterile dressing. Take off contaminated clothing and shoes immediately. Do not reuse clothing until thoroughly cleaned.*

*NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.*

· **After eye contact:**

*Hold eyelids apart, initiate and maintain gentle and continuous irrigation of the eye with water until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Rinse immediately with plenty of water also under the eyelids for at least 20 minutes.*

· **After swallowing:**

*Never give anything by mouth to an unconscious person. Do not induce vomiting. Give one glass of water unless victim is drowsy, convulsing, or unconscious. Seek medical attention immediately.*

## 5 Fire fighting measures

· **Suitable extinguishing agents:**

*Use fire fighting measures that suit the environment.  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*

· **For safety reasons unsuitable extinguishing agents:**

*Do not use water in a jet. Product will float. Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.*

· **Special hazards caused by the material, its products of combustion or resulting gases:**

*During heating or in case of fire poisonous gases are produced.  
Material will not burn unless preheated. Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. May generate ammonia gas, toxic nitrogen oxide gases and other potentially hazardous nitrogen-containing compounds may be released upon combustion.*

*Use of water to fight fire may result in the formation of very toxic aqueous solutions. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.*

*Cool fire exposed containers with water.*

· **Protective equipment:**

*Mouth respiratory protective device.  
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.*

## 6 Accidental release measures

· **Person-related safety precautions:**

*Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.  
Corrosive. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas. Use cautious judgement when cleaning up large spills. Shut off leaks, if possible without personal risk.*

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- **Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

- **Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

## 7 Handling and storage

- **Handling:**

- **Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**DANGER:** Corrosive

Avoid contact with skin and eyes. Emergency Showers and eye wash stations should be readily accessible. Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols.

Heating this product 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. Fumes and vapors from these thermal and chemical decomposition may be extremely toxic. Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

- **Information about protection against explosions and fires:** Keep respiratory protective device available.

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

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

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**112-57-2 tetraethylenepentamine**

WEEL 5 mg/m<sup>3</sup>

Skin; DSEN

**872-50-4 N-methyl-2-pyrrolidone**

WEEL 10 ppm

Skin

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

Full face shields with tightly sealed goggles underneath. Contact lenses should not be worn.

· **Body protection:** Impervious protective clothing

## 9 Physical and chemical properties

· **General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	According to product specification
<b>Odor:</b>	Amine-like

· **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** 202°C (396°F)

· **Flash point:** 93°C (199°F)

· **Ignition temperature:** 270°C (518°F)

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

**Lower:** 1.3 Vol %

**Upper:** 9.5 Vol %

· **Vapor pressure at 20°C (68°F):** 0.3 hPa

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- |  |                                   |
|--|-----------------------------------|
| · <b>Density at 20°C (68°F):</b>                 | 1.0052 g/cm <sup>3</sup>          |
| · <b>Solubility in / Miscibility with Water:</b> | Not miscible or difficult to mix. |
| · <b>Solvent content:</b>                        |                                   |
| <b>Organic solvents:</b>                         | 20.0 %                            |
| <b>VOC content:</b>                              | 20.0 %                            |
|  | 201.0 g/l / 1.68 lb/gl            |
| · <b>Solids content:</b>                         | 80.0 %                            |

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**  
Sodium hypochlorite, lewis or mineral acids, Organic bases such as primary and secondary aliphatic amines, ketones, aldehydes, and oxidizing agents. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. A reaction accompanied by large heat release occurs when the product is mixed with acids.
- **Dangerous reactions** Hazardous polymerization may occur with epoxy resins in large masses.
- **Dangerous products of decomposition:**  
Nitrogen oxides, ammonia, carbon monoxide and unidentified organic compounds (some containing nitrogen) may be formed during thermal or oxidative decomposition or combustion. Nitrogen oxide can react with water vapors to form corrosive nitric acid.

## 11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**112-57-2 tetraethylenepentamine**

Dermal	LD50	660 mg/kg (rabbit)
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- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Corrosive  
Irritant  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

## 12 Ecological information

- **Ecotoxicological effects:**
- **Remark:** Toxic for fish

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· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
 Danger to drinking water if even small quantities leak into the ground.  
 Also poisonous for fish and plankton in water bodies.  
 Toxic for aquatic organisms

## 13 Disposal considerations

· **Product:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Dispose of in accordance to all local, state, and/or national regulation.

## 14 Transport information

· **DOT regulations:**



· **Hazard class:** 8  
 · **Identification number:** UN2320  
 · **Packing group:** III  
 · **Proper shipping name (technical name):** TETRAETHYLENEPENTAMINE, solution  
 · **Label:** 8

· **Land transport ADR/RID (cross-border):**



· **ADR/RID class:** 8 Corrosive substances  
 · **Danger code (Kemler):** 80  
 · **UN-Number:** 2320  
 · **Packaging group:** III  
 · **Label:** 8  
 · **Special marking:** Symbol (fish and tree)  
 · **Description of goods:** 2320 TETRAETHYLENEPENTAMINE, solution

· **Maritime transport IMDG:**



· **IMDG Class:** 8  
 · **UN Number:** 2320  
 · **Label:** 8

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- **Packaging group:** III
- **EMS Number:** F-A,S-B
- **Marine pollutant:** Yes  
Symbol (fish and tree)
- **Propper shipping name:** TETRAETHYLENEPENTAMINE, solution

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 2320
- **Label:** 8
- **Packaging group:** III
- **Propper shipping name:** TETRAETHYLENEPENTAMINE, solution

- **UN "Model Regulation":** UN2320, TETRAETHYLENEPENTAMINE, solution, 8, III
- **Environmental hazards:** Product contains environmentally hazardous substances: tetraethylenepentamine

## 15 Regulations

- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

- **Section 313 (Specific toxic chemical listings):**

872-50-4 | N-methyl-2-pyrrolidone

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

872-50-4 | N-methyl-2-pyrrolidone

- **Carcinogeny categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**

Corrosive

Dangerous for the environment

· **Hazard-determining components of labelling:**

tetraethylenepentamine

· **Risk phrases:**

Harmful in contact with skin and if swallowed.

Causes burns.

May cause sensitisation by skin contact.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

Keep locked up and out of the reach of children.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

· **Special labeling of certain preparations:**

Only for trade users / technical specialists

Keep out of the reach of children.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The information given and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

· **Department issuing MSDS:** Product safety department.

· **Contact:** Paul C. Harrington

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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*GHS: Globally Harmonized System of Classification and Labelling of Chemicals**ACGIH: American Conference of Governmental Industrial Hygienists**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent*

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