

Printing date 05/23/2017

Version 3

Reviewed on 05/23/2017

## 1 Identification

- **Product identifier**
- **Product Description:** Epoxy Curing Agent
- **Product code:** Cardolite NX-5556M
- **Application of the substance / the mixture** Coating
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
 Cardolite Corporation  
 11 Deer Park Drive, Suite 124  
 Monmouth Junction, NJ 08852  
 USA  
 Tel: (973) 344-5015  
 Regulatory@cardolite.com
- **Information department:** Product safety department
- **Emergency telephone number:** 24 Hour Emergency: 800-424-9300 CHEMTREC

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3    H226    Flammable liquid and vapor.



GHS08 Health hazard

Resp. Sens. 1    H334    May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05 Corrosion

Eye Dam. 1    H318    Causes serious eye damage.



GHS07

Skin Irrit. 2    H315    Causes skin irritation.

Skin Sens. 1    H317    May cause an allergic skin reaction.

STOT SE 3    H335-H336    May cause respiratory irritation. May cause drowsiness or dizziness.

- **Label elements**
- **GHS label elements**  
 The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS05



GHS07



GHS08

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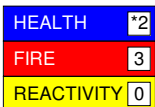
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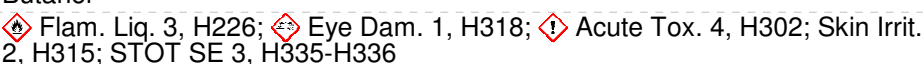
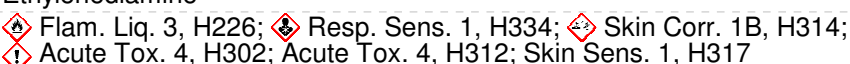
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- **Signal word** Danger
- **Hazard-determining components of labeling:**  
 Butanol  
 Ethylenediamine
- **Hazard statements**  
 H226 Flammable liquid and vapor.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H317 May cause an allergic skin reaction.  
 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
- **Precautionary statements**  
 P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**  

 Health = 2  
 Fire = 3  
 Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**  

 HEALTH 2 Health = 2  
 FIRE 3 Fire = 3  
 REACTIVITY 0 Reactivity = 0
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

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

### • Dangerous Components:

71-36-3	Butanol	17.0 - 21.0%
		
107-15-3	Ethylenediamine	< 1.0%
		

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**4 First-aid measures**

- **Description of first aid measures**
- **After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**  
Promptly isolate the scene by removing all person from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

 • **PAC-1:**

71-36-3	Butanol	60 ppm
107-15-3	Ethylenediamine	0.88 ppm

 • **PAC-2:**

71-36-3	Butanol	800 ppm
107-15-3	Ethylenediamine	9.7 ppm

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**· PAC-3:**

71-36-3	Butanol	8000** ppm
107-15-3	Ethylenediamine	20 ppm

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
 Ensure good ventilation/exhaustion at the workplace.  
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
 Keep ignition sources away - Do not smoke.  
 Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

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

**· Control parameters**
**· Components with limit values that require monitoring at the workplace:**
**71-36-3 Butanol**

PEL	300 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: C 150 mg/m <sup>3</sup> , C 50 ppm Skin
TLV	61 mg/m <sup>3</sup> , 20 ppm

**107-15-3 Ethylenediamine**

PEL	25 mg/m <sup>3</sup> , 10 ppm
REL	25 mg/m <sup>3</sup> , 10 ppm
TLV	25 mg/m <sup>3</sup> , 10 ppm Skin

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **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.  
 Avoid contact with the skin.  
 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.

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 · **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

 · **Body protection:** Protective work clothing

**9 Physical and chemical properties**

 · **Information on basic physical and chemical properties**

 · **General Information**

 · **Appearance:**

Form:	Liquid
Color:	Red-brown
Odor:	Amine-like
Odor threshold:	Not determined.

· pH-value at 25 °C (77 °F): 10.5

 · **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	> 65 °C (> 149 °F)

· Flash point: 32 °C (90 °F)

· Flammability (solid, gaseous): Not applicable.

 · **Ignition temperature:**

Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

 · **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

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- |   |  |
|---|--|
| · <b>Explosion limits:</b>                        |  |
| <b>Lower:</b>                                     | Not determined.                            |
| <b>Upper:</b>                                     | Not determined.                            |
| · <b>Vapor pressure:</b>                          | Not determined.                            |
| · <b>Density at 25 °C (77 °F):</b>                | 0.97778 g/cm <sup>3</sup> (8.16 lbs/gal)   |
| · <b>Relative density</b>                         | Not determined.                            |
| · <b>Vapor density</b>                            | Not determined.                            |
| · <b>Evaporation rate</b>                         | Not determined.                            |
| · <b>Solubility in / Miscibility with Water:</b>  | Not miscible or difficult to mix.          |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| · <b>Viscosity:</b>                               |  |
| <b>Dynamic at 25 °C (77 °F):</b>                  | 3100 cps                                   |
| <b>Kinematic:</b>                                 | Not determined.                            |
| · <b>Solvent content:</b>                         |  |
| <b>Solids content:</b>                            | 78.0 %                                     |
| · <b>Other information</b>                        | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**  
Irritating to eyes and skin.

### 71-36-3 Butanol

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3400 mg/kg (rabbit)
Inhalative	LC50/4 h	8000 mg/l (rat)

### 107-15-3 Ethylenediamine

Oral	LD50	500 mg/kg (rat)
Dermal	LD50	730 mg/kg (rabbit)
Inhalative	LC50/4 h	0.3 mg/l (mouse)

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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:**  
Sensitization possible through inhalation.  
Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant
- **Carcinogenic categories**

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

None of the ingredients is listed.

• **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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## 14 Transport information

· UN-Number	UN1866
· DOT, IMDG, IATA	
· ADR, ADN	Non-hazardous for transport

· UN proper shipping name	Resin solution
· DOT	1866 Resin solution
· ADR	Non-hazardous for transport
· ADN	RESIN SOLUTION
· IMDG, IATA	

· Transport hazard class(es)	
· DOT	



· Class	3 Flammable liquids
· Label	3

· ADR	
· Class	Non-hazardous for transport
· Label	-
· ADN/R Class:	Non-hazardous for transport

· IMDG, IATA	
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· Class	3 Flammable liquids
· Label	3

· Packing group	III
· DOT, IMDG, IATA	
· ADR	Non-hazardous for transport

· Environmental hazards:	
· Marine pollutant:	No

· Special precautions for user	Not applicable.
· Danger code (Kemler):	-
· EMS Number:	F-E,S-E

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
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· Transport/Additional information:	
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· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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• **UN "Model Regulation":** UN1866, Resin solution, 3, III

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

### • Section 355 (extremely hazardous substances):

107-15-3	Ethylenediamine
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### • Section 313 (Specific toxic chemical listings):

71-36-3	Butanol
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### • 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:

None of the ingredients is listed.

### • Carcinogenic categories

#### • EPA (Environmental Protection Agency)

71-36-3	Butanol	D
107-15-3	Ethylenediamine	D

#### • TLV (Threshold Limit Value established by ACGIH)

107-15-3	Ethylenediamine	A4
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#### • NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

### • GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

### • Hazard pictograms



GHS02 GHS05 GHS07 GHS08

### • Signal word Danger

### • Hazard-determining components of labeling:

Butanol  
Ethylenediamine

### • Hazard statements

H226 Flammable liquid and vapor.

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- H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317 May cause an allergic skin reaction.  
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

**• Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**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.

- **Department issuing SDS:** Product safety department

- **Contact:** Mr Eleazar dela Cruz

- **Date of preparation / last revision** 05/23/2017 / 2

- **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)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TVL: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Flam. Liq. 3: Flammable liquids – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Corr. 1B: Skin corrosion/irritation – Category 1B  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
Resp. Sens. 1: Respiratory sensitisation – Category 1  
Skin Sens. 1: Skin sensitisation – Category 1  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

US