

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

1 Identification

- **Product identifier**
- **Product Description:** Epoxy Curing Agent
- **Product code:** Cardolite LITE 2562
- **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.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS02 GHS05 GHS08

- **Signal word** Danger

(Contd. on page 2)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 1)

• 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.

• Precautionary statements

 P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P241 Use explosion-proof electrical/ventilating/lighting/equipment.
 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.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• Classification system:

• NFPA ratings (scale 0 - 4)


 Health = 1
 Fire = 3
 Reactivity = 0

• HMIS-ratings (scale 0 - 4)


 Health = 1
 Fire = 3
 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:

1330-20-7	Xylenes	20.0 - 28.0%
	 Flam. Liq. 3, H226;  Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	
71-36-3	Butanol	7.0 - 9.0%
	 Flam. Liq. 3, H226;  Eye Dam. 1, H318;  Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	

(Contd. on page 3)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

107-15-3	Ethylenediamine ⚠ Flam. Liq. 3, H226; ⚠ Resp. Sens. 1, H334; ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Sens. 1, H317	(Contd. of page 2) < 0.5%
----------	--	------------------------------

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **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:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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.

(Contd. on page 4)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

1330-20-7	Xylenes	130 ppm
71-36-3	Butanol	60 ppm
107-15-3	Ethylenediamine	0.88 ppm

· PAC-2:

1330-20-7	Xylenes	920* ppm
71-36-3	Butanol	800 ppm
107-15-3	Ethylenediamine	9.7 ppm

· PAC-3:

1330-20-7	Xylenes	2500* ppm
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

Keep container tightly closed and in a well ventilated place.

· 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:

1330-20-7 Xylenes

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 655 mg/m ³ , 150 ppm
	Long-term value: 435 mg/m ³ , 100 ppm
TLV	Short-term value: 651 mg/m ³ , 150 ppm
	Long-term value: 434 mg/m ³ , 100 ppm
BEI	

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 4)

71-36-3 Butanol

PEL	Long-term value: 300 mg/m ³ , 100 ppm
REL	Ceiling limit value: 150 mg/m ³ , 50 ppm Skin
TLV	Long-term value: 61 mg/m ³ , 20 ppm

107-15-3 Ethylenediamine

PEL	Long-term value: 25 mg/m ³ , 10 ppm
REL	Long-term value: 25 mg/m ³ , 10 ppm
TLV	Long-term value: 25 mg/m ³ , 10 ppm Skin

• Ingredients with biological limit values:

1330-20-7 Xylenes

BEI	1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids
-----	--

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
Use local exhaust ventilation. Suitable respiratory equipment should be used in cases of insufficient ventilation.
- **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.
- **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.

(Contd. on page 6)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 5)

· 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:

Yellow-brown

· Odor:

Amine-like

· Odor threshold:

Not determined.

· pH-value:

Not determined.

· Change in condition

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

> 66 °C (>150.8 °F)

· Flash point:

32 °C (89.6 °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.

· Explosion limits:

Lower:

Not determined.

Upper:

Not determined.

· Vapor pressure:

Not determined.

· Density at 25 °C (77 °F):

 0,9634 g/cm³ (8.03957 lbs/gal)

· Relative density

Not determined.

· Vapor density

Not determined.

· Evaporation rate

Not determined.

· Solubility in / Miscibility with

Water:

Not miscible or difficult to mix.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic at 25 °C (77 °F):

1500 cps

Kinematic:

Not determined.

(Contd. on page 7)

US

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 6)

 • **Solvent content:**

- | | |
|----------------------------|--|
| • Solids content: | 65,0 % |
| • Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Product is stable.
- **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.

1330-20-7 Xylenes

Oral	LD50	4,300 mg/kg (rat)
Dermal	LD50	2,000 mg/kg (rabbit)

71-36-3 Butanol

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

107-15-3 Ethylenediamine

Oral	LD50	866 mg/kg (rat)
Dermal	LD50	560 mg/kg (rabbit)
Inhalative	LC50/4 h	14.7 mg/l (rat)

- **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

(Contd. on page 8)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 7)

• Carcinogenic categories

• IARC (International Agency for Research on Cancer)

1330-20-7 Xylenes

3

• 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 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.

• 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.

14 Transport information

• UN-Number

• DOT, ADR, IMDG, IATA

UN1866

• UN proper shipping name

• DOT

• ADR

• IMDG, IATA

Resin solution

1866 Resin solution

RESIN SOLUTION

(Contd. on page 9)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 8)

· Transport hazard class(es)

· DOT



· Class

3 Flammable liquids

· Label

3

· ADR



· Class

3 Flammable liquids

· Label

 Miscellaneous dangerous substances and articles
 3

· IMDG, IATA



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, ADR, IMDG, IATA

III

· Environmental hazards:

· Marine pollutant:

No

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E, S-E

· Stowage Category

A

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 60 L

On cargo aircraft only: 220 L

· ADR

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

(Contd. on page 10)

US

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 9)

- | | |
|--|--|
| <ul style="list-style-type: none"> • IMDG • Limited quantities (LQ) • Excepted quantities (EQ) | 5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml |
| <ul style="list-style-type: none"> • UN "Model Regulation": | UN 1866 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
----------	-----------------

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

1330-20-7	Xylenes
-----------	---------

71-36-3	Butanol
---------	---------

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

All ingredients are listed.

- **TSCA new (21st Century Act) (Substances not 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)**

1330-20-7	Xylenes	I
-----------	---------	---

71-36-3	Butanol	D
---------	---------	---

107-15-3	Ethylenediamine	D
----------	-----------------	---

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

1330-20-7	Xylenes	A4
-----------	---------	----

107-15-3	Ethylenediamine	A4
----------	-----------------	----

- **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).

(Contd. on page 11)

Product Description: Epoxy Curing Agent

(Contd. of page 10)

· **Hazard pictograms**



GHS02 GHS05 GHS08

· **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.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
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.
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** 01/05/2018 / 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)
VOC: Volatile Organic Compounds (USA, EU)
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

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/05/2018

Version 3

Reviewed on 01/05/2018

Product Description: Epoxy Curing Agent

(Contd. of page 11)

PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEL: Biological 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