

## 1 Identification

- **Product identifier**
- **Product Description:** Epoxy resin
- **Product code:** Cardolite FormuLITE 2501A
- **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: (609)-436-0902  
 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**



Skin Irrit. 2 H315 Causes skin irritation.  
 Eye Irrit. 2A H319 Causes serious eye 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**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
 Liquid epoxy resin  
 Cashew, nutshell liq., polymer with epichlorohydrin
- **Hazard statements**  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H317 May cause an allergic skin reaction.
- **Precautionary statements**  
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
 P280 Wear protective gloves.  
 P280 Wear eye protection / face protection.  
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P321 Specific treatment (see on this label).  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

**Product Description: Epoxy resin**

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
 Fire = 1  
 Reactivity = 0

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



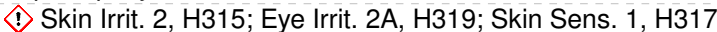

HEALTH 1 Health = 1  
 FIRE 1 Fire = 1  
 REACTIVITY 0 Reactivity = 0

- **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:**

25068-38-6	Liquid epoxy resin 	80.0 - 90.0%
68413-24-1	Cashew, nutshell liq., polymer with epichlorohydrin 	10.0 - 20.0%

**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. If symptoms persist, 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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 3)

**Product Description: Epoxy resin**

(Contd. of page 2)

- **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** Not required.
- **Environmental precautions:**  
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.
- **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.
- **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.

**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:** No special measures required.
- **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:**  
Cardolite epoxy resins and hardeners may absorb moisture and carbon dioxide when left in open containers, which could result in increased viscosity, discoloration, reduction of reactivity, and/or crystallization of the products. These products should be kept tightly sealed in their original containers when not in use, and stored in a cool, dry place. Some Cardolite epoxy resins might crystallize. This reversible, physical phenomena can be greatly avoided by storing the resin at temperatures above 25 °C.
- **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:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 4)

**Product Description: Epoxy resin**

(Contd. of page 3)

- **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 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

- **Body protection:** Protective work clothing

**9 Physical and chemical properties**

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

 · **General Information**

 · **Appearance:**

- |                          |                 |
|--------------------------|-----------------|
| · <b>Form:</b>           | Liquid          |
| · <b>Color:</b>          | Light yellow    |
| · <b>Odor:</b>           | Mild            |
| · <b>Odor threshold:</b> | Not determined. |

- |                    |                 |
|--------------------|-----------------|
| · <b>pH-value:</b> | Not determined. |
|--------------------|-----------------|

 · **Change in condition**

- |                                       |               |
|---------------------------------------|---------------|
| · <b>Melting point/Melting range:</b> | Undetermined. |
| · <b>Boiling point/Boiling range:</b> | Undetermined. |

- |                       |                     |
|-----------------------|---------------------|
| · <b>Flash point:</b> | > 250 °C (> 482 °F) |
|-----------------------|---------------------|

(Contd. on page 5)


**Product Description: Epoxy resin**

(Contd. of page 4)

· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <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>	1.138 g/cm <sup>3</sup> (9.497 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>	2000 - 2500 cps
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Solids content:</b>	> 98.0 %
· <b>Other information</b>	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.
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

(Contd. on page 6)

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**Product Description: Epoxy resin**

(Contd. of page 5)

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
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.

- **Ecotoxicological effects:**

- **Remark:** Toxic for fish

- **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.

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

- **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**



UN3082

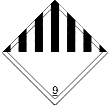

(Contd. on page 7)

**Product Description: Epoxy resin**

(Contd. of page 6)

<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> </ul>	Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700))
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> </ul>	3082 Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700))
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> </ul>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)), MARINE POLLUTANT
<ul style="list-style-type: none"> <li>· <b>IATA</b></li> </ul>	Environmentally hazardous substance, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700))

<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>	
 	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	9 Miscellaneous dangerous substances and articles 9

<ul style="list-style-type: none"> <li>· <b>ADR</b></li> </ul>	
 	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	9 Miscellaneous dangerous substances and articles Miscellaneous dangerous substances and articles 9

<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	III
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<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>	Product contains environmentally hazardous substances: reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)
<ul style="list-style-type: none"> <li>· <b>Marine pollutant:</b></li> </ul>	Yes (DOT) Symbol (fish and tree)
<ul style="list-style-type: none"> <li>· <b>Special marking (ADR):</b></li> </ul>	Symbol (fish and tree)
<ul style="list-style-type: none"> <li>· <b>Special marking (IATA):</b></li> </ul>	Symbol (fish and tree)

<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>	Warning: Miscellaneous dangerous substances and articles
<ul style="list-style-type: none"> <li>· <b>Danger code (Kemler):</b></li> </ul>	90
<ul style="list-style-type: none"> <li>· <b>EMS Number:</b></li> </ul>	F-A,S-F
<ul style="list-style-type: none"> <li>· <b>Stowage Category</b></li> </ul>	A

<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	Not applicable.
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(Contd. on page 8)

**Product Description: Epoxy resin**

(Contd. of page 7)

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>   |   |
| <ul style="list-style-type: none"> <li>· <b>DOT</b></li> <li>· <b>Quantity limitations</b></li> </ul>  | On passenger aircraft/rail: No LIMIT<br>On cargo aircraft only: NO LIMIT  |
| <ul style="list-style-type: none"> <li>· <b>Remarks:</b></li> </ul>  | Special marking with the symbol (fish and tree).  |
| -----  |   |
| <ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>  | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml  |
| -----  |   |
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul> | 5L<br>Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml  |
| -----  |   |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>  | UN 3082 ENVIRONMENTALLY HAZARDOUS<br>SUBSTANCES, LIQUID, N.O.S. (REACTION PRODUCT:<br>BISPHENOL-A-(EPICHLORHYDRIN) EPOXY RESIN<br>(NUMBER AVERAGE MOLECULAR WEIGHT ≤ 700)), 9,<br>III |

**15 Regulatory information**

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

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

None of the ingredients is listed.

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

None of the ingredients is listed.

- **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

(Contd. on page 9)



**Product Description: Epoxy resin**

(Contd. of page 8)

- **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**



GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**

Liquid epoxy resin

Cashew, nutshell liq., polymer with epichlorohydrin

- **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves.

P280 Wear eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

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** 07/15/2016 / 1

- **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 &amp; Health

TTL: Treshold Limit Value

(Contd. on page 10)



Printing date 07/15/2016

**Safety Data Sheet**  
acc. to OSHA HCS

Version 2

Reviewed on 07/15/2016

**Product Description: Epoxy resin**

(Contd. of page 9)

PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
Skin Sens. 1: Skin sensitisation – Category 1

US