

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

Print Date 04/03/2015

Revision Date 03/23/2015

**Product Identifier**

**Trade Name:** EP1056LC BLACK B

**Application of the Substance or Mixture:** Epoxy Hardener

**Details of the Supplier of the Safety Data Sheet (SDS)**

**Manufacturer or Supplier:**

Resinlab, LLC  
N109 W13300 Ellsworth Drive,  
Germantown, WI 53022  
1-800-388-8605  
www.resinlab.com

**Information Department:** Product Safety Department: msds@resinlab.com

**Emergency Telephone Number:**

North America - Chemtrec: 1-800-424-9300 (24 hours)

International - Chemtrec: 01-703-527-3887 (24 hours)

**2 Hazard(s) identification**

**Hazard Classification**



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

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).

**Pictogram(s)**



GHS05



GHS07



GHS08



GHS09

**Signal Word** Danger

**Hazard-determining Component(s)**

Tofa, reaction products with TEPA  
4-Nonylphenol, branched  
Tetraethylenepentamine  
Bisphenol-A-(epichlorohydrin) epoxy resin

**Hazard statements**

Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.

(Contd. on page 2)

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

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 1)

*Suspected of damaging fertility or the unborn child.  
Toxic to aquatic life with long lasting effects.*

**Precautionary statements**

*Do not breathe dusts or mists.  
Wear protective gloves.  
Wear eye protection / face protection.  
Avoid release to the environment.  
Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
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/doctor.  
Specific treatment (see on this label).  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
IF exposed or concerned: Get medical advice/attention.  
If skin irritation or rash occurs: Get medical advice/attention.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Collect spillage.  
Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.*

**Prevention**

*Do not breathe dust/fume/gas/mist/vapors/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.  
Avoid release to the environment.  
Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Avoid breathing dust/fume/gas/mist/vapors/spray*

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

**Hazard Rating System**

**NFPA System**

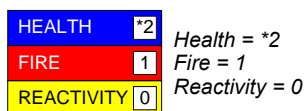
**NFPA Ratings (scale 0 - 4)**



NFPA special hazards (water reactivity and oxidizing property): None

**HMIS System**

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



**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.  
**vPvB:** Not applicable.

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

Trade Name: EP1056LC BLACK B

(Contd. of page 2)

### 3 Composition/information on ingredients

#### Chemical Characterization: Mixtures

##### Composition/Information on Ingredients

CAS: 68953-36-6 EINECS: 273-201-6	Tofa, reaction products with TEPA ↓ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	50-60%
CAS: 84852-15-3 EINECS: 284-625-5 Index Number: 601-053-00-8	4-Nonylphenol, branched ↓ Repr. 2, H361 ↓ Skin Corr. 1B, H314; Eye Dam. 1, H318 ↓ Aquatic Chronic 1, H410 ↓ Acute Tox. 4, H302	10-20%
CAS: 25068-38-6 NLP: 500-033-5 Index Number: 603-074-00-8	Bisphenol-A-(epichlorohydrin) epoxy resin ↓ Aquatic Chronic 2, H411 ↓ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	10-20%
CAS: 112-57-2 EINECS: 203-986-2 Index Number: 612-060-00-0 RTECS: KH8585000	Tetraethylenepentamine ↓ Resp. Sens. 1, H334 ↓ Skin Corr. 1B, H314; Eye Dam. 1, H318 ↓ Aquatic Chronic 2, H411 ↓ Acute Tox. 4, H312 ↓ Aquatic Acute 2, H401	5-<10%
CAS: 140-31-8 EINECS: 205-411-0 Index Number: 612-105-00-4 RTECS: TK 8050000	N-(2-Aminoethyl)piperazine ↓ Acute Tox. 3, H311 ↓ Skin Corr. 1B, H314; Eye Dam. 1, H318 ↓ Acute Tox. 4, H302; Skin Sens. 1, H317 ↓ Aquatic Acute 3, H402; Aquatic Chronic 3, H412	5-<10%

#### Classification System:

The Classifications were based on the Toxicological and Ecological Data of the substances/mixtures in the Section 11 and 12.

### 4 First-aid measures

#### Description of First Aid Measures

##### General Information

Symptoms may be delayed several hours after exposure; victims should be medically observed for at least 48 hours after exposure. Ensure medical personnel are aware of exposure and take precautions for their personal protection; see Section 8 for the information of personal protection.

##### After Inhalation

Remove victim from exposure to fresh air. Keep person at rest. Provide oxygen if person is not breathing. Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation. If breathing is difficult, administer oxygen. Seek immediate medical advice.

##### After Skin Contact

Immediately remove all contaminated clothing and put them in a tightly sealed bag. Immediately wash contaminated skin with water and soap and rinse them thoroughly. Seek immediate medical advice even if no symptoms develop.

##### After Eye Contact

Immediately rinse opened eyes for at least 15 minutes under running water. Immediately remove contact lenses if present. Continue rinsing. Do not put any ointments, oils or medication in eyes without specific instructions. IMMEDIATELY transport victim to a hospital even if no symptoms develop.

##### After Swallowing

If victim is unconscious; never give anything by mouth. If victim is conscious; rinse out mouth and give victim small amounts of water. Do NOT induce vomiting. If vomiting occurs spontaneously, keep victim's head below hips to prevent aspiration of liquid into lungs.

(Contd. on page 4)

## Safety Data Sheet acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 3)

Seek immediate medical advice.

· **After Exposure** Get medical advice/attention at once.

· **Information for Doctor** Have chemical containers, labels and/or (M)SDS ready when calling or visiting a medical center.

· **Indication of any Immediate Medical Attention and Special Treatment Needed**

After frequent or high intense exposure, the following medical tests are recommended:

eye tests

skin tests

kidney tests

Reproductive system function tests

Check section 11 Toxicological Information for further relevant information.

· **Additional Information**

For additional information, please consult the corresponding first aid measures in the most current version of Emergency Response Guidebook which is produced by the US Department of Transportation.

### 5 Fire-fighting measures

· **Extinguishing Media**

· **Suitable Extinguishing Agent(s)**

Use fire fighting measures and extinguishing agents that suit the environment.

In case of fire, suitable extinguishing agents are:

Alcohol resistant foam.

Dry chemical or fire-extinguishing powder.

Carbon dioxide (CO<sub>2</sub>).

Water spray or water fog.

· **Unsuitable Extinguishing Agent(s)** Water with full jet

· **Firefighting Procedures**

Isolate fire and deny unnecessary entry.

Immediately withdraw all personnel from the area in case of rising sound from venting safety device.

Eliminate all ignition sources if safe to do so.

Do not extinguish fire unless flow can be stopped.

Fight fire remotely due to the risk of explosion.

Solid stream of water may spread fire; use water spray or water fog.

Cool all affected containers with flooding quantities of water.

Runoff from fire control or dilution water may be corrosive and/or toxic; protect personnel and minimize property damage.

Contain fire water runoff if possible to prevent environmental pollution.

Fight fire from protected location or safe distance.

Contain fire water runoff if possible to prevent environmental pollution.

· **Special Hazards Arising in Fire**

Will not burn unless preheated.

In case of fire, following can be released:

Phenolic compounds

nitric acid

nitrosamine

Aldehydes and or ketones.

Ammonia gas may be liberated at high temperatures.

Carbon dioxide (CO<sub>2</sub>) and Carbon monoxide (CO)

Nitrogen oxides

· **Advice for Firefighters**

If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA fire brigades standard (29 CFR 1910.156).

As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.

· **Additional Information** Ensure adequate and functional fire fighting facilities equipped in working area at all times.

US

(Contd. on page 5)

## Safety Data Sheet acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 4)

### 6 Accidental release measures

#### Personal Precautions

Do not touch damaged containers or spills unless wearing appropriate protective equipment.  
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during use.  
Ensure personnel take precautions for their personal protection during clean up; see Section 8 for the specific requirements.

#### Environmental Precautions

Keep away from sewage system or other water courses; do not penetrate ground/soil.  
Inform respective authorities in case of any seepage to the environment.

#### Cleaning Up Methods

Ensure adequate ventilation.  
Eliminate all ignition sources.  
Keep unauthorized personnel away.  
For large spills:  
Shut off source of leak if safe to do so.  
Dike and contain.  
Remove with vacuum trucks or pump to storage/salvage vessels.  
Allow molten product to cool.  
Absorb residues with liquid-binding materials.  
For small spills:  
Ventilate and wash area after clean-up is complete.  
Collect spills in suitable and properly labeled containers.  
Do not use solvents unless following safe handling practices and within the recommended exposure guidelines.  
Dispose contaminated chemicals as waste according to Section 13.

**Additional Information** No further relevant information.

### 7 Handling and storage

#### Handling

##### Precautions for Safe Handling

Obtain special instruction before use; do not handle until all safety precautions have been read and understood.  
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during handling.  
Avoid any body contact of containers or contents unless wearing appropriate personal protective equipment.  
Wear respiratory protection when handling.  
Handle in well ventilated work space.  
Keep away from incompatible material(s).  
Avoid any release into the environment.  
Observe all the personal protection requirements in Section 8.

##### Information about Protection Against Explosions and Fires

Will not burn unless preheated.  
Keep away from heat, sparks, open flame and other ignition sources during handling.

#### Storage

##### Requirements to be Met by Storerooms and Receptacles

Store in a well-ventilated place; provide ventilation for receptacles.  
Keep stored in accordance with local, regional, national, and international regulations.

##### Information about Storage in One Common Storage Facility

Store away from incompatible material(s).  
Store away from foodstuffs.  
Avoid release to the environment.

**Additional Information** No further relevant information.

US

(Contd. on page 6)

## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 5)

### 8 Exposure controls/personal protection

#### Engineering Measures or Controls

##### Exposure Limit Values that Require Monitoring at the Workplace

###### 84852-15-3 4-Nonylphenol, branched

TEEL-1 Short-term value: 20 mg/m<sup>3</sup>TEEL-2 Short-term value: 125 mg/m<sup>3</sup>TEEL-3 Short-term value: 500 mg/m<sup>3</sup>

###### 112-57-2 Tetraethylenepentamine

WEEL Long-term value: 5 mg/m<sup>3</sup>  
Skin; DSEN

###### 140-31-8 N-(2-Aminoethyl)piperazine

TEEL-1 Short-term value: 7.5 mg/m<sup>3</sup>TEEL-2 Short-term value: 50.0 mg/m<sup>3</sup>TEEL-3 Short-term value: 500 mg/m<sup>3</sup>

#### Other Engineering Measures or Controls

Ventilation rates should be matched to conditions.

If applicable, use process enclosure(s), local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

#### Personal Protective

##### General Protective and Hygienic Measures

Avoid any contact with skin or eye.

Do not eat, drink or smoke during work.

Keep food, drink or feed away from working area.

Contaminated work clothing is not allowed out of workplace.

Clean hands and exposed skin thoroughly after work and before breaks.

##### Personal Protective Equipment (PPE)

###### Breathing Equipment

Caution! Improper use of respirators is dangerous.

In case of brief exposure or low pollution, use a respiratory filter device.

In case of intensive or longer exposure, use a positive-pressure respiratory protective device that is independent of circulating air.

###### Hand Protection



Protective gloves

Selection of glove material should take into consideration the penetration times, rates of diffusion, and the degradation.

Suggested glove type(s):

Nitrile Gloves

Butyl Rubber Gloves

Fluoroelastomer or Viton Gloves

###### Eye Protection



Brief or short term use: Tightly sealed goggles



Intensive or long term use: Tightly sealed goggles and Face Shields

(Contd. on page 7)

US



## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 6)

#### Body Protection


*Intensive or long term use: Protective Clothing*

#### Additional Information

All protective clothing (suits, gloves, footwear, headgear) should be clean, available every day, and put on before work.  
 The Engineering measures or controls, and PPE recommendations are only guidelines and may not apply to every situation. For additional information, please consult the corresponding requirements under OSHA 29 CFR 1910.94-95, and 29 CFR 1910.132-138.

## 9 Physical and chemical properties

### Information on Basic Physical and Chemical Properties

#### Appearance:

- **Form:** Liquid
- **Color:** Amber
- **Odor:** Amine-like
- **Odor Threshold:** Not determined.

· **PH-Value:** Not determined.

#### Change in Condition:

- **Melting Point:** Not determined.
- **Boiling Point:** 204 °C (399 °F)
- **Flash Point:** 99 °C (210 °F)
- **Decomposition Temperature:** Not determined.
- **Flammability:** Not determined.
- **Explosion:** Not determined.
- **Explosion Limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.

- **Vapor Pressure:** Not determined.
- **Density at 25 °C (77 °F):** 0.99 g/cm<sup>3</sup> (8.262 lbs/gal)
- **Solubility in or Miscibility with**
  - **Water:** Partially miscible.
- **Viscosity:**
  - **Dynamic at 20 °C (68 °F):** 6200 mPas
  - **Kinematic:** Not determined.

· **Additional Information** No further relevant information.

## 10 Stability and reactivity

- **Physical Hazard(s)** Not a regulated reactive or physical hazard under GHS.
- **Hazardous Reactivity and Chemical Stability** Stable under normal conditions of use, storage and temperatures.
- **Thermal Decomposition and Conditions to be Avoided**  
 Keep away from incompatible material(s).  
 Thermally decomposes during fire or high heat; keep away from heat, sparks, open flame and other ignition sources.
- **Possibility of Other Hazardous Reaction(s)**  
 May slowly corrode Copper, Aluminum, Nickel, Cobalt, Zinc and Galvanized surfaces.

(Contd. on page 8)

## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 7)

May react with strong reducing agents generating flammable hydrogen (H<sub>2</sub>).

**Incompatible Material(s)**

Oxidizing agents  
 Bases (Alkalis)  
 Amines.  
 Mercaptans  
 Strong reducing agents  
 Sodium hypochlorite, Nitrous acid and other nitrosating agents  
 Isocyanates  
 Aldehydes  
 Acids  
 Chlorinated hydrocarbons

**Hazardous Decomposition Product(s)**

Nitric acid, nitrogen oxides and nitrosamine.  
 Carbon Monoxide and Carbon Dioxide  
 Ammonia (NH<sub>3</sub>) and/or Amines.  
 Thermally decomposes during fire or very high heat. See Section 5 for fire hazards evolved during thermal decomposition.

**Hazardous Polymerization Product(s)** No relevant information.

**Additional Information** No further relevant information.

## 11 Toxicological information

**Acute Toxicity**
**Oral**
**68953-36-6 Tofa, reaction products with TEPA**

Oral	LD50	(rat) (LD50 > 2000 mg/kg) 3125 mg/kg (mouse) (Read-across from 68140-00-1& 68155-06-6) Reference: Air products (M)SDS (2012).
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**84852-15-3 4-Nonylphenol, branched**

Oral	LD50	1604 mg/kg (rat) Reference: Royce SDS (2015)
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**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Oral	LD50	11400 mg/kg (rat) 15600 mg/kg (mouse) Reference: NLM Toxnet (2010).
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**112-57-2 Tetraethylenepentamine**

Oral	LD50	2100 mg/kg (white rats) (Classified as Cat 4 by EU) 3900 mg/kg (rats) EC classified the substance as an Acute-4 oral hazard although the lowest LD50 (oral) available was over 2000 mg/kg. Reference: HSNO (2010), HSDB (2011) and ESIS (2011).
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**140-31-8 N-(2-Aminoethyl)piperazine**

Oral	LD50	2140 mg/kg (rat) Royce SDS (2015)
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**Potential Health Effect(s):**

If swallowed, may cause:  
 diarrhea  
 nausea  
 shock or collapse  
 Not a classified acute oral hazard.

**Dermal**
**68953-36-6 Tofa, reaction products with TEPA**

Dermal	LD50	(rabbit) (LD50 ≥ 8550 mg/kg) Reference: Air products (M)SDS (2012).
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(Contd. on page 9)



## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 8)

**84852-15-3 4-Nonylphenol, branched**

 Dermal LD50 2031 mg/kg (rabbit)  
 Royce SDS (2015)

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

 Dermal LD50 20000 mg/kg (rabbit) (Test guideline not available)  
 > 1270 mg/kg (mouse)  
 > 2000 mg/kg (rat)  
 > 1600 mg/kg (rabbit); however, there was no fixed test result available; classification was not possible without further information.  
 Reference: Royce (M)SDS (2011) and ChemID (2010).

**112-57-2 Tetraethylenepentamine**

 Dermal LD50 660 mg/kg (rabbit)  
 Reference: OECD SIDS (2001).

**140-31-8 N-(2-Aminoethyl)piperazine**

 Dermal LD50 866 mg/kg (rabbit)  
 Reference: OECD SIDS (2005).

**Potential Health Effect(s):** Not a classified acute dermal hazard.

**Inhalative**
**84852-15-3 4-Nonylphenol, branched**

 Inhalative LC50/4 h (mouse) (Non-toxic; LC50 exceeded the saturated vapor value)  
 At 267 mg/m<sup>3</sup> (230 ppm), there was no significant depression. At the saturated vapor concentration of 3636 mg/m<sup>3</sup> (400 ppm) at 70 °C, there was sensory irritation observed which was rapidly gone after removal from exposure. The substance was not classified as an acute inhalative hazard under its regular use.  
 Reference: IUCLID Dataset (2000).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Inhalative LC50/4 h (Test species: n/a) (Toxicity not expected based on the acute oral data)

**112-57-2 Tetraethylenepentamine**

 Inhalative LC50/4 h (rat) (LC0/8hrs >9.9ppm (saturated vapor concentration))  
 No mortality or any signs of toxicities were observed after an 8 hour inhalation of 9.9 ppm of the substance which was the saturated vapor and the highest tested concentration.  
 Reference: OECD SIDS (2001).

**140-31-8 N-(2-Aminoethyl)piperazine**

 Inhalative LC50/4 h (rat) (No mortality observed at saturated atmosphere)  
 No mortality was observed in rats after a single exposure to the saturated atmosphere for 8 hours.  
 Reference: OECD SIDS (2005).

**Potential Health Effect(s):**

While not a classified inhalative acute toxicity hazard, the product may cause the following symptoms:

burning sensation

sore throat

Not a classified acute inhalative hazard.

cough, headache, nausea, shortness of breath, vomiting, and wheezing

**Skin Corrosion or Irritation**
**68953-36-6 Tofa, reaction products with TEPA**

Corrosion/Irritation (No data available)

**84852-15-3 4-Nonylphenol, branched**

 Corrosion/Irritation corrosive (rabbit) (Directive 84/449/EEC B4; Post-exposure: 8 days)  
 All tested animals showed signs of erythema, edema, and eschar which were not fully reversible within 8 days.  
 Reference: IUCLID Dataset (2000).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

 Corrosion/Irritation irritating (rabbit)  
 Acute skin irritation was mild, through repeated and prolonged exposure may cause severe irritation.  
 The substance was classified as Category 2 by GHS-J.  
 Reference: HSNO CCID (2010) and GHS-J (2006).

**112-57-2 Tetraethylenepentamine**

(Contd. on page 10)

US

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 9)

Corrosion/Irritation	corrosive (rabbit) (serious skin burns within 20-30 min of application) The substance caused serious skin burns within 20-30 min of application, and necrosis following a 4 hour exposure period in rabbit skin. The substance was therefore considered as corrosive (Category 1) to rabbit skin. Reference: OECD SIDS (2001).
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**140-31-8 N-(2-Aminoethyl)piperazine**

Corrosion/Irritation	corrosive (rabbit) (US DOT Corrosivity Assay) 100 % pure substance (4 hours) - corrosive 10 % substance ( 9 -11 days) - moderate irritation 10 % substance (abraded skin, 2 days) - deep necrosis Thus, the substance was classified as corrosive to rabbit skin (Category 1). Reference: OECD SIDS (2005).
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**Potential Health Effect(s):**

Causes severe skin burns and eye damage.  
In contact with skin, may cause:  
redness, pain and severe skin burns

**Eye Serious Damage or Irritation**
**68953-36-6 Tofa, reaction products with TEPA**

Damage/Irritation	(No data available)
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**84852-15-3 4-Nonylphenol, branched**

Damage/Irritation	serious irrit. (rabbit) (Draize Test) There was corneal opacity in all animals and iritis in two. Meanwhile, all treated animals showed marked conjunctival involvement with transient discharges. Thus, the substance was classified as a serious eye irritant (Category 1). Reference: IUCLID Dataset (2000).
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**25068-38-6 Bisphenol-A(epichlorohydrin) epoxy resin**

Damage/Irritation	irritating (rabbit) The substance caused eye irritation (Category 2A) based on the dermal effect to rabbit skin.
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**112-57-2 Tetraethylenepentamine**

Damage/Irritation	serious damage (rabbit) (Based on the skin corrosion results) The substance was classified as a serious eye irritant (Category 1) based on the skin corrosion results.
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**140-31-8 N-(2-Aminoethyl)piperazine**

Damage/Irritation	serious damage (rabbit) Neat substance applied to rabbit eyes caused extensive irritation in the conjunctiva and cornea, which most likely resulted in permanent blindness. Reference: OECD SIDS (2005).
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**Potential Health Effect(s):**

Causes serious eye damage.  
In contact with eye, may cause:  
decrease or loss of vision  
redness, pain and severe deep burns

**Respiratory or Skin Sensitization**
**68953-36-6 Tofa, reaction products with TEPA**

Sensitization	Skin	(No data available)
	Respiratory	(No data available)

**84852-15-3 4-Nonylphenol, branched**

Sensitization	Skin	not sensitizing (guinea pig) (Buehler test with OECD TG 406) Guinea pig maximization test - negative There was no significant difference between treated and negative controlled groups; the substance was not classified as a dermal sensitizer. Reference: IUCLID Dataset (2000).
	Respiratory	(No data available)

**25068-38-6 Bisphenol-A(epichlorohydrin) epoxy resin**

Sensitization	Skin	sensitizing (Human) Based on positive results from skin sensitization tests on human volunteers and guinea pigs, GHS-J classified the substance as a dermal sensitizer. Reference: GHS-J (2006).
	Respiratory	(No data available)

(Contd. on page 11)

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 10)

**112-57-2 Tetraethylenepentamine**

Sensitization	Skin	sensitizing (Human) (Based on human epidemiological report) There were skin sensitization results reported in human victims after exposure to the substance. (guinea pig) Maximization test - a 50% concentrated solution of the substance induced a positive result. The substance is therefore classified as a dermal sensitizer (Category 1). Reference: OECD SIDS (2001).
	Respiratory	(No data available)

**140-31-8 N-(2-Aminoethyl)piperazine**

Sensitization	Skin	sensitizing (guinea pig) (OECD TG 406) 5 out of 20 guinea pigs showed positive responses in the maximization tests. For safety reason, the substance was classified as a skin sensitizer (Category 1). Reference: OECD SIDS (2005).
	Respiratory	(No data available)

**Potential Health Effect(s):**

May cause an allergic skin reaction.

Repeated skin contact may cause dermatitis, skin rash or itchiness.

No relevant information for respiratory sensitization; classification is not possible.

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

None of the ingredients is listed.

**Germ Cell Mutagenicity**
**68953-36-6 Tofa, reaction products with TEPA**

Mutagenicity (No data available)

**84852-15-3 4-Nonylphenol, branched**

Mutagenicity negative (mouse) (In Vivo (Directive 79/831/EEC, B12))  
In Vitro (Ames test; salmonella typhimurium) - negative with and without metabolic activation  
In Vitro (HGPRT assay with OECD TG 476; Chinese Hamster) - negative with and without metabolic activation  
In Vivo (Directive 79/831/EEC, B12; mouse) - no mutagenic effects in mouse erythrocytes were observed during the test sampling time.  
Reference: IUCLID Dataset (2000).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Mutagenicity positive (Chinese hamster lung fibroblast cells) (In Vitro (Chromosomal Aberration))  
In Vitro (Chromosomal Aberration; Chinese hamster lung fibroblast cells) - Positive without metabolic activation; negative with metabolic activation.  
Positive (salmonella typhimurium) (In Vitro (Ames assay)). Due to the absence from In Vivo tests, it was not possible to make a conclusion of mutagenicity of the substance.  
Reference: NLM CCRIS (2010).

**112-57-2 Tetraethylenepentamine**

Mutagenicity negative (mouse) (In Vivo (Micronucleus assay))  
(Rats and Mice)  
In Vitro (rat; Unscheduled DNA synthesis) - Positive with and without metabolic activation.  
In Vivo (mouse; Micronucleus assay) - Negative  
(salmonella typhimurium)  
In Vitro - Positive with and without metabolic activation.  
(Chinese Hamster)  
In Vitro (Gene mutation) - Negative with and without metabolic activation.  
In Vitro (Sister Chromatid Exchange) - Positive with and without metabolic activation.  
Due to the negative results from In Vivo tests, the substance was not classified as a mutagen.  
Reference: OECD SIDS (2001).

**140-31-8 N-(2-Aminoethyl)piperazine**

Mutagenicity negative (Human) (In Vitro (Cytogenic Assay with OECD TG 473))  
In Vitro (Salmonella typhimurium; OECD TG 471) - Negative with and without metabolic activation  
negative (mouse) (In Vivo (Micronucleus Assay))  
In Vitro (Mouse; Lymphoma Assay) - Negative with and without metabolic activation.  
In Vitro (Mouse; Gene Mutation Assay) - Positive without metabolic activation (due to high pH)  
In Vitro (Rat; Unscheduled DNA Synthesis with OECD TG 482) - Negative  
In Vitro (Saccharomyces cerevisiae) - Negative with and without metabolic activation.  
When considering all of the evidence, the substance is not classified as a mutagen.  
Reference: OECD SIDS (2005) and IUCLID Dataset (2000).

(Contd. on page 12)

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

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 11)

**Potential Health Effect(s):** No further relevant information; classification is not possible.

**Carcinogenicity**

**68953-36-6 Tofa, reaction products with TEPA**

Carcinogenicity: negative (Test species: n/a) (not listed by OSHA, ACGIH, NTP or IARC)

**84852-15-3 4-Nonylphenol, branched**

Carcinogenicity: negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)  
Reference: Hexion (M)SDS (2004).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Carcinogenicity: negative (Test species: n/a) (Not listed by ACGIH, IARC, NTP, or OSHA) (Mouse)  
1 out of 4 cases with female mice showed positive carcinogenic results after a repeated dermal application with 10% concentration of the substance for two years. When considering all of the evidence, the substance was not classified as a carcinogen.  
Reference: Dow (M)SDS (2010).

**112-57-2 Tetraethylenepentamine**

Carcinogenicity: negative (mouse) (No carcinogenic effect in mouse skin observed)  
Reference: OECD SIDS (2001).

**140-31-8 N-(2-Aminoethyl)piperazine**

Carcinogenicity: negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)

**Potential Health Effect(s):** Not a known Carcinogen.

**Reproductive Toxicity**

**68953-36-6 Tofa, reaction products with TEPA**

Reproductive Toxi.: (No data available)

**84852-15-3 4-Nonylphenol, branched**

Reproductive Toxi.: positive (rat) (NOAEL (oral) = 15 mg/kg/day)  
There were adverse effects on pups observed at the non-maternally toxic doses; the substance was therefore classified as a suspected reproductive hazard by EU.  
Reference: EPA HPVIS (2010) and REACH CLP (2012).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Reproductive Toxi.: negative (Test species: n/a) (no reproductive or developmental effect observed)  
There was no reproductive or developmental effect observed at dosing levels that were toxic to parental animals.  
Reference: GHS-J (2006).

**112-57-2 Tetraethylenepentamine**

Reproductive Toxi.: (No data available)

**140-31-8 N-(2-Aminoethyl)piperazine**

Reproductive Toxi.: negative (rat) (OECD TG 422; No reproductive performance observed)  
Route: Oral with up to 416 mg/kg/day (male rats) and 598 mg/kg/day (female rats)  
No reproductive performance in maternal animals or general physical condition in F1 pups was observed at any dose levels. Thus, the substance was not classified as a reproductive hazard.  
Reference: ECHA (2011).

**Potential Health Effect(s):**

Suspected of damaging fertility or the unborn child.  
Not a known Reproductive hazard.  
No relevant information; classification is not possible.

**Specific Target Organ Toxicity - Single Exposure**

**68953-36-6 Tofa, reaction products with TEPA**

STOT-Single: (No data available)

**84852-15-3 4-Nonylphenol, branched**

STOT-Single: (No data available)

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

STOT-Single: Target: None (Rats and Mice) (No effect after single oral doses)  
Somnolence (general depressed activity) and dyspnea were observed after a single oral application with 11400 mg/kg to rats, or 15600 mg/kg to mice of the substance. However, the dose levels were both outside of the guidance value ranges.  
Reference: NLM Toxnet (2010).

(Contd. on page 13)

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 12)

**112-57-2 Tetraethylenepentamine**

STOT-Single (No data available)

**140-31-8 N-(2-Aminoethyl)piperazine**

STOT-Single Target: N/A (rat) (conclusive but not sufficient for classification)

NOAEL (oral) &lt; 2097 mg/kg

At necropsy, slightly congested lungs, mottled livers, intestine and adrenal hemorrhaged stomach, and congested internally but pale externally kidneys were observed in victims that were killed at the dose level of 2097 mg/kg. NOAEL was not established. Meanwhile, ECHA concluded it as conclusive but not sufficient for classification.

Reference: ECHA (2011).

**Potential Health Effect(s):** No relevant information; classification is not possible.

**Specific Target Organ Toxicity - Repeated Exposure**
**68953-36-6 Tofa, reaction products with TEPA**

STOT-Repeated (No data available)

**84852-15-3 4-Nonylphenol, branched**

STOT-Repeated (rat) (Target: Kidney via Oral routes)

NOAEL (oral, 90 days) = 50 mg/kg/day; there were renal tubular epithelial degeneration and renal tubular dilatation observed from the test animals.

Reference: Huntsman (M)SDS (2009), EPA HPVIS (2010), IUCLID Dataset (2000) and GHS-J (2006).

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

STOT-Repeated Target: N/A (guinea pig) (insufficient data for classification)

With dermal application of the substance for 55 days, increased seromucoid concentrations, decreased lactate-dehydrogenase (LDH), and decreased leucyl/naphthylamidase (LNA) were observed in the test animals. Meanwhile, the substance caused a toxic effect on blood components of female guinea-pigs with greater effects on pregnant animals. However, there was no detail available regarding the dose level or test guideline, classification was thus not possible.

Reference: HSNO CCID (2010).

**112-57-2 Tetraethylenepentamine**

STOT-Repeated Target: None (rabbit) (No systemic effect after oral or dermal doses)

Dermal (OECD TG 410): There were no systemic or relevant adverse effects observed.

Oral: No significant change was observed by comparing the treated animals with the controlled groups.

Reference: OECD SIDS (2001).

**140-31-8 N-(2-Aminoethyl)piperazine**

STOT-Repeated Target: None (rat) (After repeated dermal or oral administration)

Target organs: None

NOAEL (dermal; 4 weeks; OECD TG 410) = 1000 mg/kg/day (the maximum test dose)

There was no evidence of systemic toxicity observed.

(rat) (Oral; OECD TG 422)

Target organs: None

A test item-related lower mean final body weight was apparent in females of the 8000 ppm/day group (598 mg/kg/day) at the scheduled necropsy. However, the dose level was outside of the guidance value ranges.

Reference: OECD SIDS (2005) and ECHA (2011).

**Potential Health Effect(s):** May cause damage to organs through prolonged or repeated exposure.

**Aspiration Hazard**
**68953-36-6 Tofa, reaction products with TEPA**

Aspiration Hazard (No data available)

**84852-15-3 4-Nonylphenol, branched**

Aspiration Hazard (No data available)

**25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin**

Aspiration Hazard (No data available)

**112-57-2 Tetraethylenepentamine**

Aspiration Hazard (No data available)

**140-31-8 N-(2-Aminoethyl)piperazine**

Aspiration Hazard (No data available)

**Potential Health Effect(s):** No relevant information; classification is not possible.

(Contd. on page 14)



## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 13)

**Additional Information** No further relevant information.

## 12 Ecological information

### Aquatic Environmental Toxicity

#### 68953-36-6 Tofa, reaction products with TEPA

Algae Toxicity	1.1-2.2 mg/l ( <i>Scenedesmus subspicatus</i> ) (EC50 (96 hrs); OECD TG 201) EC50 (96 hrs; OECD TG 201; Read-across from 68140-00-1, 68155-06-6 and 68603-42-9) = 1.1-2.2 mg/l
Crustacean Toxicity	0.3-4.2 mg/l ( <i>Daphnia magna</i> (water flea)) (EC50 (48 hrs); OECD TG 202 and EEC Method C2) EC50 (48 hrs; Read-across from 71820-35-4; OECD TG 202 and EEC Method C2) = 0.3 - 4.2 mg/L ( <i>Ceriodaphnia dubia</i> ) (Read-across from 68603-42-9; EPA-600/3-88-034(-36)) EC50 (48 hrs) = 2.25 mg/L ( <i>Daphnia Pulex</i> ) (Read-across from 68603-42-9; EPA/600/485/013) EC50 (48 hrs) = 2.39 mg/L
Fish Toxicity	0.43 mg/l (Test species: n/a) (LC50 (96 hrs); OECD TG 203) 0.43 mg/L (Test species: N/a) (LC50 (96 hrs); OECD TG 203; Read-across from 68910-93-0) 2.6 mg/L ( <i>Pimephales promelas</i> (fathead minnow)) (LC50 (96 hrs); Read-across from 93-83-4) 3.6 mg/L ( <i>Brachydanio rerio</i> (Zebra fish)) (LC50 (96 hrs); Read-across from 68603-42-9; ISO 7346/1-3) Based on the rapid degradability, the substance is not classified as a chronic environmental hazard; based on the lowest acute L(E)C50 (fish and crustacea) < 1 mg/L, the substance is classified as an Acute-1 environmental hazard. Reference: Air products (M)SDS (2012), IUCLID Dataset (2000) and EPA HPVIS (2010).

#### 84852-15-3 4-Nonylphenol, branched

Algae Toxicity	0.27 mg/l ( <i>Skeletonema costatum</i> ) (EC50 (96 hrs)) ( <i>Pseudokirchneriella subcapitata</i> ) EC50 (96 hrs) = 0.41 mg/L ( <i>Scenedesmus subspicatus</i> ) EC50 (72 hrs; Algenwachstums-Hemmtest nach UBA) = 1.3 mg/L
Crustacean Toxicity	0.15 mg/l ( <i>Hyalella azteca</i> ) (EC50 (96 hrs)) ( <i>Daphnia magna</i> (water flea)) EC50 (48 hrs) = 0.035 mg/L Royce SDS (2015) NOEC (21 days) = 0.024 mg/L ( <i>Mysidopsis bahia</i> ) EC50 (96 hrs) = 0.043 mg/L NOEC (28 days) = 3.9 µg/L
Fish Toxicity	0.14 mg/l ( <i>Pimephales promelas</i> (fathead minnow)) Royce SDS (2015)

#### 25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

Algae Toxicity	(No data available)
Crustacean Toxicity	1.4 - 1.7 mg/l ( <i>Daphnia magna</i> (water flea)) (EC50 (48 hrs))
Fish Toxicity	1.41 mg/l ( <i>Oryzias latipes</i> (Rice fish)) (LC50 (96 hrs)) 3.1 mg/l ( <i>Pimephales promelas</i> (fathead minnow)) (LC50 (96 hrs)) Based on the non-rapid degradability and the acute LC50 < 10 mg/L, the substance is classified as a Chronic-2 environmental hazard. Reference: Dow (M)SDS (2010) and CHRIP (2010).

#### 112-57-2 Tetraethylenepentamine

Algae Toxicity	2 mg/l ( <i>Pseudokirchneriella subcapitata</i> ) (ErC50 (72 hrs, growth rate)) Based on the non-rapid degradability and the algal ErC50 < 1 mg/L, the substance is classified as a Chronic-1 environmental hazard.
Crustacean Toxicity	14.6 mg/l ( <i>Daphnia magna</i> (water flea)) (LC50 (48 hrs))
Fish Toxicity	420 mg/l ( <i>Poecilia reticulata</i> ) (LC50 (96 hrs)) 420 mg/l ( <i>Guppy</i> ( <i>Poecilia reticulata</i> )) (LC50 (96 hrs)) Reference: OECD SIDS (2001).

#### 140-31-8 N-(2-Aminoethyl)piperazine

Algae Toxicity	495 mg/l (Green Algae) (EC50 (72 hrs); OECD TG 201) Royce SDS (2015)
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(Contd. on page 15)

US



## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 14)

Crustacean Toxicity	32 mg/l ( <i>Daphnia magna</i> (water flea)) (EC50 (48 hrs); OECD TG 202) Based on the non-rapid degradability and the acute EC50 < 100 mg/L, the substance is classified as a Chronic-3 environmental hazard. Royce SDS (2015)
Fish Toxicity	368 mg/l ( <i>Leuciscus idus</i> (Ide or Orfe)) (LC50 (96 hrs)) 560 mg/l ( <i>Pimephales promelas</i> (fathead minnow)) (LC50 (96 hrs); OECD TG 203) Reference: OECD SIDS (2005) and ECHA (2011).

**Aquatic Environmental Toxicity Assessment:** Toxic to aquatic life with long lasting effects.

#### Degradability and Stability

##### 68953-36-6 Tofa, reaction products with TEPA

Biodegradation	readily biodeg. (Activated Sludge) (Read-across from 68140-00-1 and 68603-42-9) Biodegradation (OECD TG 303A; aerobic) = 92% Biodegradation (OECD TG 303A; anaerobic) = 79% (Test species: n/a) (Read-across from 68140-00-1, 68155-06-6&68063-42-9) Biodegradation (30 days; Directive 84/449/EEC C6) = 55-90% Thus, the substance is readily biodegradable. Reference: IUCLID Dataset (2000).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	(27 - 93)E(-12) cm <sup>3</sup> /molecule-sec (OH radical) (Read-across from 112-84-5, 124-26-5 and 301-02-0) Half-Life = 1.5-4.5 hours; however, photolysis in water is negligible. Reference: EPA HPVIS (2010).
Stability in water	(No data available)

##### 84852-15-3 4-Nonylphenol, branched

Biodegradation	non-biodegrad. (Test species: n/a) (Read-across from 25154-52-3; OECD TG 301C) Biodegradation (Conc. 100 ppm; 2 weeks; Direct analysis from GC, UV-vis, HPLC) = 8.9, 5.3, 2.5% Biodegradation (Conc. 100 ppm; 2 weeks; Indirect analysis from BOD) = 0% The substance is non-biodegradable. Reference: NITE CHRIP (2010).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	9.99E-11 cm <sup>3</sup> /molecule-sec (OH radical) (Half-life (5.0E5 OH/cm <sup>3</sup> ) = 0.3 day) Reference: IUCLID Dataset (2000).
Stability in water	(No data available)

##### 25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

Biodegradation	non-biodegrad. (Test species: n/a) (Biodegradation (OECD TG 302B; 28 days) = 12%) (Activated Sludge) (OECD TG 301C; 4 weeks; Conc. 100 mg/L) Biodegradation (Indirect Analysis from BOD) = 0% Biodegradation (Direct Analysis from HPLC) = 0% The substance is non-biodegradable. Reference: Dow (M)SDS (2010) and CHRIP (2010).
Persistence	(Test species: n/a) (This substance is persistent) Reference: Canada DSL (2007) and CHRIP (2010).
Photodegradation	6.69E-11 cm <sup>3</sup> /molecule-sec (OH radical) (Half-life (T1/2) = 1.92 hrs) However, photolysis in water is negligible. Reference: Dow (M)SDS (2010).
Stability in water	(No data available)

##### 112-57-2 Tetraethylenepentamine

Biodegradation	non-biodegrad. (Test species: n/a) (Biodegradation (Closed bottle test; 28 days) < 10%) Biodegradation (Die-way test; 43 and 49 days): non-biodegradable Reference: OECD SIDS (2001).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	3.06E-10 cm <sup>3</sup> /molecule-sec (OH radical) Half-life = 24 minutes; however, photolysis in water is negligible. Reference: ChemID (2010) and OECD SIDS (2001).

(Contd. on page 16)

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 15)

Stability in water	stable (Test species: n/a) (No hydrolysis group in the formula) Hydrolysis of the substance is negligible. Reference: OECD SIDS (2002).
<b>140-31-8 N-(2-Aminoethyl)piperazine</b>	
Biodegradation	non-biodegrad. (Test species: n/a) (Biodegradation (OECD TG 301C) < 5%) Biodegradation (Conc.: 100 mg/L; 4 weeks; Indirect analysis from BOD) < 1% Biodegradation (Conc.: 100 mg/L; 4 weeks; Direct analysis from TOC and GC) ≤ 5% This substance is non-biodegradable. Reference: NITE CHRIP (2011).
Persistence	(Test species: n/a) (The substance is persistent) Reference: NITE CHRIP (2011).
Photodegradation	2.14E-14 cm <sup>3</sup> /molecule-sec (OH radical) (Half-life (1.5E6 OH/cm <sup>3</sup> ) = 0.6 hours) However, photolysis effect can be seen as negligible based on the partition of the substance to air is less than 1%. Reference: OECD SIDS (2005).
Stability in water	stable (Test species: n/a) Hydrolysis is not expected under environmental conditions (pH from 5 to 9). Reference: IUCLID Dataset (2000).

### Bioaccumulation and Distribution

#### 68953-36-6 Tofa, reaction products with TEPA

BCF	(Test species: n/a) (The substance is not bioaccumulative) Reference: Canada DSL (2007).
Koc	(No data available)
LogPow	(No data available)

#### 84852-15-3 4-Nonylphenol, branched

BCF	90-330 (Cyprinus carpio) (The substance is not bioaccumulative) BCF = 250 - 330 (8 weeks; Concentration: 0.1 ppm) BCF = 90 - 220 (8 weeks; Concentration: 0.01 ppm) (Pimephales promelas (fathead minnow)) BCF (20 days, chemical concentration = 21 µg/L) = 271 Reference: NITE CHRIP (2010) and IUCLID Dataset (2000).
Koc	2580 - 25200 L/kg (Test species: n/a) Calculated from Log Koc = 0.989 LogPow - 0.346 and LogPow of 3.8 - 4.8. Reference: IUCLID Dataset (2000).
LogPow	3.8 - 4.8 (Test species: n/a) Reference: IUCLID Dataset (2000).

#### 25068-38-6 Bisphenol-A(epichlorohydrin) epoxy resin

BCF	0.56-42 (Cyprinus carpio) (The substance is low-bioaccumulative) BCF (28 days; Concentration: 10 µg/L) = 0.56 - 0.67, 3.3 - 4.2 BCF (28 days; Concentration: 1 µg/L) = 5.6 - 6.8, 33 - 42 Reference: CHRIP (2010).
Koc	1800 - 4400 L/kg (soil) Potential for mobility in soil is moderate. Reference: Dow (M)SDS (2010).
LogPow	3.7 - 3.9 (Test species: n/a) Reference: Dow (M)SDS (2010).

#### 112-57-2 Tetraethylenepentamine

BCF	4.2 (Test species: n/a) (The substance is not bioaccumulative) Reference: OECD SIDS (2002).
Koc	1098 L/kg (Test species: n/a) (By calculation, PH=5-9) The substance is highly mobile in soil. The substance partitioned primarily to soil (55%) and to a lesser extent water (45%) based on Level III Fugacity Modeling. Reference: OECD SIDS (2002).
LogPow	- 3.16 (Test species: n/a) (other: EPIWIN) Reference: OECD SIDS (2002).

(Contd. on page 17)

US

## Safety Data Sheet

### acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 16)

**140-31-8 N-(2-Aminoethyl)piperazine**

BCF	(Test species: n/a) (The substance is not bioaccumulative) Reference: Canada DSL (2007).
Koc	37000 L/kg (Test species: n/a) (Batch equilibrium method) The substance is expected to have high affinity for adsorption to soil and sediments via a cation exchange mechanism. The substance would partition primarily to water (71.4%) and to a lesser extent soil (28.6%) based on Level 3 Fugacity Modeling. Reference: ECHA (2011).
LogPow	-1.48 (Test species: n/a) (Shake-flask method) Reference: ECHA (2011) and OECD SIDS (2005).

**Degradability and Bioaccumulation Assessment:**

No further relevant information; assessment is not possible.  
Rapidly degradable; but low-bioaccumulative.

**Additional Information** No further relevant information.

### 13 Disposal considerations

**Hazardous Waste List**
**Description:**

The product has not been evaluated for its hazards when disposed as a waste by RCRA. However, it is necessary to contain and dispose of the product as a hazardous waste based on the Hazard Identification in Section 2.

**Waste Treatment Recommendation:**

Generation of waste should be avoided or minimized wherever possible.  
Chemical waste, even small quantities, is neither allowed to be poured down drains, sewage system or waterways; nor disposed with household garbage.  
Dispose of contents/containers in accordance with local, regional, national, and international regulations.

**Unused and Uncontaminated Packagings**

**Recommendation** Dispose of according to your local waste regulations.

### 14 Transport information

**UN-Number**

**DOT, ADR, IMDG, IATA** UN3267

**UN Proper Shipping Name**

**DOT, ADR, IMDG, IATA** Corrosive liquid, basic, organic, n.o.s. (4-Nonylphenol, branched, Tetraethylenepentamine)

**Transport hazard class(es)**

**DOT**



**Class**

8 Corrosive substances

**Label**

8

(Contd. on page 18)

US

## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 17)

**ADR**

**Class Label**

 8 (C7) Corrosive substances  
 8

**IMDG**

**Class Label**

 8 Corrosive substances  
 8

**IATA**

**Class Label**

 8 Corrosive substances  
 8

**Packing group**

DOT, ADR, IMDG, IATA

III

**Environmental Hazards:**
**Marine Pollutant:**

 Yes  
 Symbol (fish and tree)

**Special Precautions:**

Warning: Corrosive substances

**Danger Code (Kemler):**

80

**EMS Number:**

F-A, S-B

**Segregation Groups**

Alkalis

**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: 5 L  
 On cargo aircraft only: 60 L

**ADR**
**Excepted quantities (EQ)**

 Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

**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

(Contd. on page 19)

## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 18)

**UN "Model Regulation":**

UN3267, Corrosive liquid, basic, organic, n.o.s. (4-Nonylphenol, branched, Tetraethylenepentamine), 8, III

### 15 Regulatory information

**USA Regulation Lists**
**SARA (Superfund Amendments and Reauthorization Act of 1986)**
**Section 302 (Extremely Hazardous Substances)**

None of the ingredients is listed.

**Section 313 (Toxics Release Inventory (TRI) reporting)**

None of the ingredients is listed.

**Section 311/312 (Hazardous Chemical Inventory Reporting)**

84852-15-3	4-Nonylphenol, branched	A	10-20%
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin	A, C	10-<20%
112-57-2	Tetraethylenepentamine	A	5-<10%
140-31-8	N-(2-Aminoethyl)piperazine	A, C	5-<10%

**Hazard Abbreviations for SARA 311/312**

A - Acute Health Hazard  
 C - Chronic Health Hazard  
 F - Fire Hazard  
 R - Reactive Hazard  
 S - Sudden Release of Pressure Hazard

**TSCA (Toxic Substances Control Act)**

All ingredients are listed.

**Proposition 65**
**Chemicals Known to Cause Cancer**

106-89-8 1-chloro-2,3-epoxypropane

**Chemicals Known to Cause Reproductive Toxicity for Females**

None of the ingredients is listed.

**Chemicals Known to Cause Reproductive Toxicity for Males**

106-89-8 1-chloro-2,3-epoxypropane

**Chemicals Known to Cause Developmental Toxicity**

None of the ingredients is listed.

**Carcinogenic 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.

**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.

(Contd. on page 20)

## Safety Data Sheet

acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 19)

**International Regulation Lists**
**Canadian Domestic Substance Listings:**

All ingredients are listed.

**Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

**Canadian Ingredient Disclosure list (limit 1%)**

112-57-2 Tetraethylenepentamine

140-31-8 N-(2-Aminoethyl)piperazine

**Chinese Chemical Inventory of Existing Chemical Substances:**

All ingredients are listed.

**Japanese Existing and New Chemical Substance List:**

All ingredients are listed.

**Korean Existing Chemical Inventory:**

All ingredients are listed.

**European Pre-registered substances:**

All ingredients are listed.

**REACH - Substances of Very High Concern (SVHC) List:**

84852-15-3 4-Nonylphenol, branched

10-20%

**Restriction of Hazardous Substances Directive (RoHS) list:**

None of the ingredients is listed.

### 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 (M)SDS:** Product Safety Department

**Contact:** msds@resinlab.com

**Abbreviations and acronyms:**

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service (division of the American Chemical Society)

CLP/GHS: CLP (Classification, Labelling and Packaging of substances and mixtures) implements the Globally harmonised System (GHS) under Regulation (EC) No 1272/2008.

DOT: US Department of Transportation

HMIS: US National Paint &amp; Coatings Association (NPCA) Hazardous Materials Identification System

HPVIS: US EPA High Production Volume Information System

IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)

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

IMDG: International Maritime Dangerous Goods; the principal international rules for International Carriage of Dangerous Goods by SEA under the Recommendations on the Transport of Dangerous Goods by United Nations (RTDG)

LC50/LD50: Lethal Concentration/Dose, 50 percent

N/a: Not available or Not applicable

NFPA: US National Fire Protection Association

NIOSH: US National Institute of Occupational Safety and Health

OSHA: US Occupational Safety and Health Administration

P: Marine Pollutant

RCRA: Resource Conservation and Recovery Act (USA)

REACH: EU Registry, Evaluation and Authorisation of Chemicals

SARA: US Superfund Amendments and Reauthorization Act

TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)

TSCA: US Toxic Substance Control Act

(Contd. on page 21)

US



## Safety Data Sheet acc. to OSHA HCS

Print Date 04/03/2015

Revision Date 03/23/2015

**Trade Name: EP1056LC BLACK B**

(Contd. of page 20)

*ACToR: US EPA Aggregated Computational Toxicology Resource*  
*BCF: Bioconcentration Factor*  
*CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System*  
*CHRIP: Japan NITE Information on Biodegradation and Bioconcentration of the Existing Chemical Substances in the Chemical Risk Information Platform*  
*DSL: Canada Domestic Substance List*  
*ECHA: European Chemicals Agency's Dissemination portal with information on chemical substances registered under REACH*  
*ESIS: European Chemical Substances Information System*  
*HSDB: US NLM TOXNET Hazardous Substances Databank*  
*HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database*  
*IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)*  
*ICSC: International Chemical Safety Cards*  
*IUCLID: EU REACH International Uniform Chemical Information Database*  
*Koc: Partition coefficient, soil Organic Carbon to water*  
*NITE: National Institute of Technology and Evaluation, Japan*  
*NLM TOXNET: US National Library of Medicine Toxicology Data Network*  
*OECD: Organisation for Economic Co-operation and Development*  
*RID: the Regulations Concerning the International Carriage of Dangerous Goods by Rail; published by the Central Office for International Carriage by Rail (OTIF)*  
*RTDG: the Recommendations on the Transport of Dangerous Goods by United Nations (UN)*  
*RTECS: US Registry of Toxic Effects of Chemical Substances*  
*SIDS: OECD existing chemicals Screening Information Data Sets*  
*SVHC: EU ECHA Substance of Very High Concern*  
*TOXLINE: US NLM bibliographic database search system*  
**Date of preparation / last revision** 04/03/2015 / 2

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