

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/25/2020

Reviewed on 02/17/2020

1 Identification

- **Product identifier**
- **Trade name:** 40-3900CSI, 40-3901CSI
- **Article number:** Polyamide Formulation
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Epoxies, Etc.
21 Starline Way
Cranston, RI 02921
USA
- **General Telephone:** 401-946-5564
- **Information department:** Product safety department.
- **Emergency telephone number:** Domestic: 800-255-3924 International: +01-813-248-0585



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

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



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms** GHS05, GHS07, GHS08

- **Signal word** Danger

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

- Polyaminoamide

- silver

- triethylenetetramine

- **Hazard statements**

- Causes skin irritation.

- Causes serious eye damage.

- May cause allergy or asthma symptoms or breathing difficulties if inhaled.

- May cause an allergic skin reaction.

- May cause respiratory irritation.

- **Precautionary statements**

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

- Wash thoroughly after handling.

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Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves / eye protection / face protection.
 [In case of inadequate ventilation] wear respiratory protection.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 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).
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 If experiencing respiratory symptoms: Call a poison center/doctor.
 Wash contaminated clothing before reuse.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**· **HMIS-ratings (scale 0 - 4)**· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:** The exact percentage (concentration) of composition has been withheld as a trade secret.· **Dangerous components:**

7440-22-4	silver	50-100%
68410-23-1	Polyaminoamide	25-50%
112-24-3	triethylenetetramine	2.5-10%

4 First-aid measures

· **Description of first aid measures**· **General information:** Immediately remove any clothing soiled by the product.· **After inhalation:**

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

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

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- **After skin contact:**

Remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned. Get medical attention if skin irritation persists.

- **After eye contact:**

Immediately flush eyes with plenty of water for 15 minutes while holding eyelids open. Rinse continuously with water while on the way to get medical attention.

- **After swallowing:**

Do not induce vomiting. Give one glass of water unless victim is drowsy, convulsing, or unconscious. Seek medical attention.

- **Information for doctor:**

Notes to physician

Symptoms: Irritation as noted above. Skin sensitization (allergy) may be evidenced by rashes, especially hives.

- **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:**

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

- **Special hazards arising from the substance or mixture**

Material will not burn unless preheated. Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. Nitrogen oxides and other potentially hazardous nitrogen-containing compounds may be released upon combustion.

Cool fire exposed containers with water.

- **Advice for firefighters**

- **Protective equipment:**

Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves, and rubber boots) including a positive pressure NIOSH approved self-contained breathing apparatus.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

May burn although not readily ignitable. Use cautious judgement when cleaning up large spills. Shut off leaks, if possible without personal risk.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

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.

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· Protective Action Criteria for Chemicals

· PAC-1:		
7440-22-4	silver	0.3 mg/m ³
68410-23-1	Polyaminoamide	30 mg/m ³
112-24-3	triethylenetetramine	3 ppm
90-72-2	2,4,6-tris(dimethylaminomethyl)phenol	6.5 mg/m ³
· PAC-2:		
7440-22-4	silver	170 mg/m ³
68410-23-1	Polyaminoamide	330 mg/m ³
112-24-3	triethylenetetramine	14 ppm
90-72-2	2,4,6-tris(dimethylaminomethyl)phenol	72 mg/m ³
· PAC-3:		
7440-22-4	silver	990 mg/m ³
68410-23-1	Polyaminoamide	2,000 mg/m ³
112-24-3	triethylenetetramine	83 ppm
90-72-2	2,4,6-tris(dimethylaminomethyl)phenol	430 mg/m ³

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

WARNING. May cause severe eye irritation. May cause skin irritation. May cause gastrointestinal tract irritation. May cause severe irritation to the nose, throat and respiratory tract. May cause skin sensitization. Even empty containers can contain residues which can contain hazardous product. Contaminated leather articles including shoes should be destroyed to prevent reuse. Heating this product above 300 Deg. F in the presence of air may cause slow oxidative decomposition; above 500 Deg. F, polymerization may occur. Some epoxy resins can produce exothermic reactions which in large masses can cause runaway polymerization. Fumes and vapors from these thermal and chemical decomposition may be extremely toxic. Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· Storage:

· Requirements to be met by storerooms and receptacles:

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

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

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

· **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 following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

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7440-22-4 silverPEL Long-term value: 0.01 mg/m³REL Long-term value: 0.01 mg/m³TLV Long-term value: 0.1 mg/m³
metal: dust and fume**112-24-3 triethylenetetramine**WEEL Long-term value: 6 mg/m³, 1 ppm
Skin

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

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

· **Protection of hands:**



Protective gloves

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

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

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

· **Material of gloves**

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

· **Penetration time of glove material**

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

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Liquid

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· Color:	According to product specification
· Odor:	Amine-like
· Odor threshold:	Not determined.
· pH-value:	Not applicable.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	220 °C (428 °F)
· Flammability (solid, gaseous):	Not determined.
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
VOC content:	0.00 %
Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Hazardous polymerization may occur with epoxy resins in large masses.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Avoid contact with strong oxidizing agents.
- **Hazardous decomposition products:**
Nitrogen oxides, carbon monoxide and unidentified organic compounds (some containing nitrogen) may be formed during thermal or oxidative decomposition or combustion.

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· **Additional information:** Stable under normal use conditions.

11 Toxicological information

· **Information on toxicological effects**· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:**

7440-22-4 silver

Oral	LD50	2,000 mg/kg (rat)
------	------	-------------------

68410-23-1 Polyaminoamide

Oral	LD50	>2,000 mg/kg (rat)
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Dermal	LD50	>2,000 mg/kg (rabbit)
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· **Primary irritant effect:**· **on the skin:** Irritant to skin and mucous membranes.· **on the eye:** Strong irritant with the danger of severe eye injury.· **Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

· **Additional toxicological information:**

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

Harmful

Irritant

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

12 Ecological information

· **Toxicity**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:**

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

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

14 Transport information

- | | |
|---|-----------------|
| · UN-Number | |
| · DOT, ADR, ADN, IMDG, IATA | Not Applicable |
| · UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | Not Applicable |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | Not Applicable |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Not Applicable |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · DOT | |
| · Remarks: | Not Regulated |
| · ADR | |
| · Remarks: | Not Regulated |
| · IMDG | |
| · Remarks: | Not Regulated |
| · IATA | |
| · Remarks: | Not Regulated |
| · UN "Model Regulation": | Not Applicable |

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15 Regulatory information

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

· **Sara**

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

None of the ingredient is listed.

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

7440-22-4 silver

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

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **California 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.

· **New Jersey Right-to-Know List:**

7440-22-4 silver

112-24-3 triethylenetetramine

· **Pennsylvania Right-to-Know List:**

7440-22-4 silver

112-24-3 triethylenetetramine

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

7440-22-4 silver

D

· **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.

· **Chinese Chemical Inventory of Existing Chemical Substances**

All ingredients are listed.

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

· **Hazard pictograms** GHS05, GHS07, GHS08

· **Signal word** Danger

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

Polyaminoamide

silver

triethylenetetramine

· **Hazard statements**

Causes skin irritation.

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Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation.

· Precautionary statements

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

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves / eye protection / face protection.

[In case of inadequate ventilation] wear respiratory protection.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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).

Take off contaminated clothing and wash it before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/doctor.

Wash contaminated clothing before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

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

· National regulations:

· Other regulations, limitations and prohibitive regulations

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is listed.

· 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. The information given and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

· Department issuing SDS: Product safety department.

· Contact: Paul C. Harrington

· Date of preparation / last revision 02/17/2020 / -

· Abbreviations and acronyms:

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

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

ICAO: International Civil Aviation Organisation

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

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

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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
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
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

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1 Identification

- **Product identifier**
- **Trade name:** 40-3900RSI, 40-3905RSI
- **Article number:** Epoxy Resin Formulation
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Epoxies, Etc.
21 Starline Way
Cranston, RI 02921
USA
- **General Telephone:** 401-946-5564
- **Information department:** Product safety department.
- **Emergency telephone number:** Domestic: 800-255-3924 International: +01-813-248-0585



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

- *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.*
- *STOT SE 3 H335 May cause respiratory irritation.*

- **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:**
*reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)
silver*
- **Hazard statements**
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
- **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves / eye protection / face protection.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Call a poison center/doctor if you feel unwell.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.

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If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
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:** The exact percentage (concentration) of composition has been withheld as a trade secret.

· **Dangerous components:**

7440-22-4	silver	50-100%
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	25-50%

4 First-aid measures

· **Description of first aid measures**

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:**

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

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

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Seek immediate medical advice.

A person vomiting while lying on their back should be turned onto their side.

DO NOT attempt to give anything by mouth to an unconscious person.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **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.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Keep people at a distance and stay upwind.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Send for recovery or disposal in suitable receptacles.
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.
- **Protective Action Criteria for Chemicals**

· PAC-1:

7440-22-4	silver	0.3 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	90 mg/m ³

· PAC-2:

7440-22-4	silver	170 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	990 mg/m ³

· PAC-3:

7440-22-4	silver	990 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	5,900 mg/m ³

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 Store in cool, dry place in tightly closed receptacles.
 Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.
 Store at ambient temperature 25 C.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 Store only in the original receptacle.
 Store in a cool location.
 Stoor indoors.
- **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.
- **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.

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- **Penetration time of glove material**

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

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form:	Liquid
Color:	According to product specification
Odor:	Mild
Odor threshold:	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	>260 °C (>500 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Decomposition temperature:** Not determined.

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

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

- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

- **Vapor pressure:** Not determined.

Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.

- **Solubility in / Miscibility with**

Water: Fully miscible.

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

- **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

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· Solvent content:	
· VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
· Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
Avoid elevated temperatures.
- **Possibility of hazardous reactions**
Reacts with amines.
Reacts with catalysts, oxidizing agents and strong alkali.
Hazardous polymerization may occur if mixed with amines in large masses and/or with heat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Strong acids, strong bases, strong oxidizers, amines, and mercaptans.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Unknown hydrocarbons.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

7440-22-4 silver		
Oral	LD50	2,000 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **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.

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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.
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:** *Dispose of in accordance to all local, state, and/or national legislation.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport information

- | | |
|--|--|
| <ul style="list-style-type: none"> · UN-Number · DOT · ADR, IMDG, IATA | <p style="margin: 0;"><i>Not Applicable</i></p> <p style="margin: 0;"><i>UN3082</i></p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR | <p style="margin: 0;"><i>Not Applicable</i></p> <p style="margin: 0;"><i>3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))</i></p> |
| <ul style="list-style-type: none"> · IMDG | <p style="margin: 0;"><i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)), MARINE POLLUTANT</i></p> |
| <ul style="list-style-type: none"> · IATA | <p style="margin: 0;"><i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))</i></p> |

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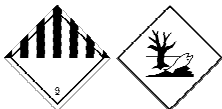
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· **Transport hazard class(es)**· **DOT**· **Class**

Not Applicable

· **ADR, IMDG, IATA**· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

9

· **Packing group**· **DOT**

Not Applicable

· **ADR, IMDG, IATA**

III

· **Environmental hazards:**· **Marine pollutant:**

Yes

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special marking (IATA):**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Hazard identification number (Kemler code):** 90· **EMS Number:**

F-A,S-F

· **Stowage Category**

A

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

Not applicable.

· **Transport/Additional information:**· **DOT**· **Remarks:**

Not regulated.

· **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

· **UN "Model Regulation":**

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION PRODUCT: BISPHENOL-A-(EPICHLORHYDRIN) EPOXY RESIN (NUMBER AVERAGE MOLECULAR WEIGHT ≤ 700)), 9, III

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15 Regulatory information

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

· **Sara**

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

25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)
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· **Section 313 (Specific toxic chemical listings):**

7440-22-4	silver
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· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **California 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.

· **New Jersey Right-to-Know List:**

All ingredients are listed.

· **Pennsylvania Right-to-Know List:**

All ingredients are listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

7440-22-4	silver	D
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· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Chinese Chemical Inventory of Existing Chemical Substances**

All ingredients are 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:**

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)
silver

· **Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

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May cause respiratory irritation.

· **Precautionary statements**

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

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves / eye protection / face protection.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Call a poison center/doctor if you feel unwell.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

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

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

· **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. The information given and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

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

· **Contact:** Paul C. Harrington

· **Date of preparation / last revision** 02/17/2020 / -

· **Abbreviations and acronyms:**

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

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

ICAO: International Civil Aviation Organisation

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

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)

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*LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**SVHC: Substances of Very High Concern**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**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**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

USA