

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/13/2020

Reviewed on 02/13/2020

1 Identification

- **Product identifier**
- **Trade Name:** 3021A
- **Article number:** ESOLDER 3021A
- **Application of the substance / the mixture** Coating compound/ Surface coating/ paint
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Von Roll USA, Inc.
200 Von Roll Drive
SCHENECTADY, NY 12306
USA
- **Information department:** Environmental Health and Safety Department
- **Emergency telephone number:**
During normal opening hours (day-time): +1 (518) 344-7100
ChemTrec 24 hours Emergency Number: +1 800-262-8200
Mahoney 24 hours Emergency Message Service: +1 (518) 793-7788

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS09 Environment

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



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.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08



GHS09

- **Signal word** Danger

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

silver

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

1,4-bis(2,3-epoxypropoxy)butane

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· Hazard statements*H315 Causes skin irritation.**H319 Causes serious eye irritation.**H317 May cause an allergic skin reaction.**H370 Causes damage to organs.**H372 Causes damage to organs through prolonged or repeated exposure.**H411 Toxic to aquatic life with long lasting effects.***· Precautionary statements***P260 Do not breathe dust/fume/gas/mist/vapors/spray.**P264 Wash thoroughly after handling.**P270 Do not eat, drink or smoke when using this product.**P272 Contaminated work clothing must not be allowed out of the workplace.**P273 Avoid release to the environment.**P280 Wear protective gloves / eye protection / face protection.**P302+P352 If on skin: Wash with plenty of water.**P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.**P314 Get medical advice/attention if you feel unwell.**P362+P364 Take off contaminated clothing and wash it before reuse.**P333+P313 If skin irritation or rash occurs: Get medical advice/attention.**P321 Specific treatment (see on this label).**P337+P313 If eye irritation persists: Get medical advice/attention.**P363 Wash contaminated clothing before reuse.**P391 Collect spillage.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***· Classification system:****· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 1

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2

Fire = 1

Reactivity = 0

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

3 Composition/information on ingredients

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

7440-22-4 silver	>50–≤100%
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25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	>25– \leq 50%
2425-79-8	1,4-bis(2,3-epoxypropoxy)butane	>2.5–<10%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
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
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25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	90 mg/m ³
2425-79-8	1,4-bis(2,3-epoxypropoxy)butane	16 mg/m ³
80-05-7	bisphenol A	15 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
2425-79-8	1,4-bis(2,3-epoxypropoxy)butane	170 mg/m ³
80-05-7	bisphenol A	110 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
2425-79-8	1,4-bis(2,3-epoxypropoxy)butane	220 mg/m ³
80-05-7	bisphenol A	650 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

· **Components with limit values that require monitoring at the workplace:**

7440-22-4 silver

PEL	Long-term value: 0.01 mg/m ³
REL	Long-term value: 0.01 mg/m ³
TLV	Long-term value: 0.1 mg/m ³
	metal: dust and fume

- **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.

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Store protective clothing separately.

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

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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Fluid
Color:	Silver grey
Odor:	Characteristic
Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

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

· **Flash point:** 249 °C (480.2 °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.

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· Vapor pressure:	Not applicable.
· Density at 20 °C (68 °F):	2.04 g/cm ³ (17.0238 lbs/gal)
· 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 %
· 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** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	4,923 mg/kg
Inhalative	LC50/4 h	248 mg/l

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

Oral	LD50	11,400 mg/kg (rat) 11,400 mg/kg (rabbit)
Dermal	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

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- **Carcinogenic categories**

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

122-60-1 phenyl glycidyl ether

2B

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Toxic for fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN3077

- **UN proper shipping name**

- **DOT, IATA**

Environmentally hazardous substance, solid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))

- **IMDG**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy

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· <i>resin (number average molecular weight ≤ 700)), MARINE POLLUTANT</i>	
· Transport hazard class(es) · DOT, IMDG, IATA 	
· Class · Label	9 Miscellaneous dangerous substances and articles 9
· Packing group · DOT, IMDG, IATA	III
· Environmental hazards: · Marine pollutant: · Special marking (IATA):	Product contains environmentally hazardous substances: reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) Yes (DOT) Symbol (fish and tree) Symbol (fish and tree)
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category · Stowage Code	Warning: Miscellaneous dangerous substances and articles 90 F-A,S-F A SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Remarks:	On passenger aircraft/rail: No limit On cargo aircraft only: No limit Special marking with the symbol (fish and tree).
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, 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):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

7440-22-4 silver

80-05-7 bisphenol A

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

122-60-1 phenyl glycidyl ether

· Chemicals known to cause reproductive toxicity for females:

80-05-7 bisphenol A

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

7440-22-4 silver

D

· TLV (Threshold Limit Value established by ACGIH)

122-60-1 phenyl glycidyl ether

A3

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

122-60-1 phenyl glycidyl ether

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

· Hazard pictograms



GHS07

GHS08

GHS09

· Signal word Danger

· Hazard-determining components of labeling:

silver

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

1,4-bis(2,3-epoxypropoxy)butane

· Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

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*H370 Causes damage to organs.**H372 Causes damage to organs through prolonged or repeated exposure.**H411 Toxic to aquatic life with long lasting effects.***· Precautionary statements***P260 Do not breathe dust/fume/gas/mist/vapors/spray.**P264 Wash thoroughly after handling.**P270 Do not eat, drink or smoke when using this product.**P272 Contaminated work clothing must not be allowed out of the workplace.**P273 Avoid release to the environment.**P280 Wear protective gloves / eye protection / face protection.**P302+P352 If on skin: Wash with plenty of water.**P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.**P314 Get medical advice/attention if you feel unwell.**P362+P364 Take off contaminated clothing and wash it before reuse.**P333+P313 If skin irritation or rash occurs: Get medical advice/attention.**P321 Specific treatment (see on this label).**P337+P313 If eye irritation persists: Get medical advice/attention.**P363 Wash contaminated clothing before reuse.**P391 Collect spillage.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***· Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment Health and Safety Department**· Contact:** Hitesh Surti**· Date of preparation / last revision** 02/13/2020 / -**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

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 1: Specific target organ toxicity (single exposure) – Category 1

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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· **** Data compared to the previous version altered.***

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1 Identification

- **Product identifier**
- **Trade Name:** 3021B
- **Article number:** ESOLDER 3021B
- **Application of the substance / the mixture** Coating compound/ Surface coating/ paint
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Von Roll USA, Inc.
 200 Von Roll Drive
 SCHENECTADY, NY 12306
 USA
- **Information department:** Environmental Health and Safety Department
- **Emergency telephone number:**
 During normal opening hours (day-time): +1 (518) 344-7100
 ChemTrec 24 hours Emergency Number: +1 800-262-8200
 Mahoney 24 hours Emergency Message Service: +1 (518) 793-7788

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.
 Repr. 1B H360 May damage fertility or the unborn child.
 STOT SE 1 H370 Causes damage to organs.
 STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.
 Eye Dam. 1 H318 Causes serious eye damage.



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
 Aquatic Chronic 1 H410 Very 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).

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· Hazard pictograms

GHS05

GHS08

GHS09

· Signal word Danger**· Hazard-determining components of labeling:**

silver

4-nonylphenol, branched

Polyethylene Polyamine, Dimer Fatty Acid Condensate

bisphenol A

2-piperazin-1-ylethylamine

3,6-diazaoctanethylenediamin

2,2'-iminodiethylamine

· Hazard statements

H314 Causes severe skin burns and eye damage.

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

H317 May cause an allergic skin reaction.

H360 May damage fertility or the unborn child.

H370 Causes damage to organs.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dusts or mists.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 [In case of inadequate ventilation] wear respiratory protection.

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P310 Immediately call a poison center/doctor.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P321 Specific treatment (see on this label).

P314 Get medical advice/attention if you feel unwell.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **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:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

7440-22-4	silver	>50–≤100%
84852-15-3	4-nonylphenol, branched	>10–<25%
68410-23-1	Polyethylene Polyamine, Dimer Fatty Acid Condensate	≥5–<10%
140-31-8	2-piperazin-1-ylethylamine	≥5–≤10%
112-24-3	3,6-diazaoctanethylenediamin	≥0.1–<1%
111-40-0	2,2'-iminodiethylamine	≥0.1–<1%
80-05-7	bisphenol A	≥0.1–<0.25%

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

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

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

- **Information for doctor:**

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

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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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**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
- **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.
- **Protective Action Criteria for Chemicals**

· PAC-1:

7440-22-4	silver	0.3 mg/m ³
84852-15-3	4-nonylphenol, branched	3.9 mg/m ³
68410-23-1	Polyethylene Polyamine, Dimer Fatty Acid Condensate	30 mg/m ³
140-31-8	2-piperazin-1-ylethylamine	6.4 mg/m ³
112-24-3	3,6-diazaoctanethylenediamin	3 ppm
111-40-0	2,2'-iminodiethylamine	3 ppm
80-05-7	bisphenol A	15 mg/m ³

· PAC-2:

7440-22-4	silver	170 mg/m ³
84852-15-3	4-nonylphenol, branched	43 mg/m ³
68410-23-1	Polyethylene Polyamine, Dimer Fatty Acid Condensate	330 mg/m ³
140-31-8	2-piperazin-1-ylethylamine	71 mg/m ³
112-24-3	3,6-diazaoctanethylenediamin	14 ppm
111-40-0	2,2'-iminodiethylamine	8.5 ppm
80-05-7	bisphenol A	110 mg/m ³

· PAC-3:

7440-22-4	silver	990 mg/m ³
84852-15-3	4-nonylphenol, branched	260 mg/m ³
68410-23-1	Polyethylene Polyamine, Dimer Fatty Acid Condensate	2,000 mg/m ³

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140-31-8	2-piperazin-1-ylethylamine	420 mg/m ³
112-24-3	3,6-diazaoctanethylenediamin	83 ppm
111-40-0	2,2'-iminodiethylamine	51 ppm
80-05-7	bisphenol A	650 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

· Components with limit values that require monitoring at the workplace:

7440-22-4 silver

PEL	Long-term value: 0.01 mg/m ³
REL	Long-term value: 0.01 mg/m ³
TLV	Long-term value: 0.1 mg/m ³ metal: dust and fume

112-24-3 3,6-diazaoctanethylenediamin

WEEL	Long-term value: 6 mg/m ³ , 1 ppm Skin
------	--

111-40-0 2,2'-iminodiethylamine

REL	Long-term value: 4 mg/m ³ , 1 ppm Skin
TLV	Long-term value: 4.2 mg/m ³ , 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.
Store protective clothing separately.
Avoid contact with the eyes.

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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

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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Pasty
Color:	Silver grey
Odor:	Fish-like
Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· **Flash point:** >93 °C (>199.4 °F)

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:** 315 °C (599 °F)

· **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.

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Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density at 20 °C (68 °F):	2.09696 g/cm ³ (17.49913 lbs/gal)
· Bulk density:	2 kg/m ³
· 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 %
· Other information	No further relevant information available.

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10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	2,200 mg/kg
Dermal	LD50	7,797 mg/kg
Inhalative	LC50/4 h	136 mg/l
68410-23-1 Polyethylene Polyamine, Dimer Fatty Acid Condensate		
Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	1,470 mg/kg (rat)
140-31-8 2-piperazin-1-ylethylamine		
Oral	LD50	2,140 mg/kg (rat)
Dermal	LD50	880 mg/kg (rabbit)
112-24-3 3,6-diazaoctanethylenediamin		
Oral	LD50	2,500 mg/kg (rat)

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Dermal	LD50	805 mg/kg (rabbit)
111-40-0 2,2'-iminodiethylamine		
Oral	LD50	1,080 mg/kg (rat)
Dermal	LD50	1,090 mg/kg (rabbit)
80-05-7 bisphenol A		
Oral	LD50	3,250 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

- **Primary irritant effect:**

- **on the skin:** Strong caustic effect on skin and mucous membranes.

- **on the eye:**

- Strong caustic effect.

- 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

- Corrosive

- Irritant

- Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

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

- None of the ingredients is listed.

- **NTP (National Toxicology Program)**

- None of the ingredients is listed.

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

- None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:**

- Water hazard class 3 (Self-assessment): extremely hazardous for water

- Do not allow product to reach ground water, water course or sewage system, even in small quantities.

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

- Danger to drinking water if even extremely small quantities leak into the ground.

- Also poisonous for fish and plankton in water bodies.

- Very toxic for aquatic organisms

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- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

· UN-Number	UNI759
· DOT, IMDG, IATA	
· UN proper shipping name	Corrosive solids, n.o.s. (4-nonylphenol, branched, N-Aminoethylpiperazine)
· DOT	
· IMDG	CORROSIVE SOLID, N.O.S. (4-nonylphenol, branched, N-AMINOETHYLPIPERAZINE), MARINE POLLUTANT
· IATA	Corrosive solid, n.o.s. (4-nonylphenol, branched, N-AMINOETHYLPIPERAZINE)
· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· IMDG	
	
· Class	8 Corrosive substances
· Label	8
· IATA	
	
· Class	8 Corrosive substances
· Label	8

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· Packing group · DOT, IMDG, IATA	II
· Environmental hazards: · Marine pollutant:	Product contains environmentally hazardous substances: 4-nonylphenol, branched Yes (DOT) Symbol (fish and tree)
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category	Warning: Corrosive substances 80 F-A,S-B A
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Remarks:	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg Special marking with the symbol (fish and tree).
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1759 CORROSIVE SOLID, N.O.S. (4-NONYLPHENOL, BRANCHED, N-AMINOETHYLPIPERAZINE), 8, II, ENVIRONMENTALLY HAZARDOUS

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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 ingredients is listed.

· Section 313 (Specific toxic chemical listings):

7440-22-4 silver

84852-15-3 4-nonylphenol, branched

80-05-7 bisphenol A

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

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· **Chemicals known to cause reproductive toxicity for females:**

80-05-7 | bisphenol A

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

7440-22-4 | silver

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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.

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

· **Hazard pictograms**



GHS05

GHS08

GHS09

· **Signal word** Danger

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

silver

4-nonylphenol, branched

Polyethylene Polyamine, Dimer Fatty Acid Condensate

bisphenol A

2-piperazin-1-ylethylamine

3,6-diazaoctanethylenediamin

2,2'-iminodiethylamine

· **Hazard statements**

H314 Causes severe skin burns and eye damage.

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

H317 May cause an allergic skin reaction.

H360 May damage fertility or the unborn child.

H370 Causes damage to organs.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dusts or mists.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 [In case of inadequate ventilation] wear respiratory protection.

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P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P310 Immediately call a poison center/doctor.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P321 Specific treatment (see on this label).

P314 Get medical advice/attention if you feel unwell.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment Health and Safety Department

· **Contact:** Hitesh Surti

· **Date of preparation / last revision** 02/13/2020 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Repr. 1B: Reproductive toxicity – Category 1B

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· *** Data compared to the previous version altered.**