

REN-WELD 103 RESIN US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400001012655	Date of first issue: 09/23/2016

SECTION 1. IDENTIFICATION

Product name : REN-WELD 103 RESIN US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
 Address : P.O. Box 4980
 The Woodlands,
 TX 77387
 United States of America
 Telephone : Non-Emergency: (800) 257-5547
 E-mail address of person responsible for the SDS : MSDS@huntsman.com
 Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Skin irritation : Category 2
 Eye irritation : Category 2A
 Skin sensitisation : Category 1
 Acute aquatic toxicity : Category 2
 Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.

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

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

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

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Bisphenol A epoxy resin	25068-38-6	>= 60 - <= 100
glycidylether of C12-C14 alcohols	68609-97-2	>= 7 - <= 13
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	3101-60-8	>= 3 - <= 7

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.

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If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : No data is available on the product itself.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No data is available on the product itself.

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

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- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
- Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light blue

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cloudy

Odour : slight

Odour Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Flash point : > 93 °C Method: estimated, closed cup

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit : No data is available on the product itself.

Lower explosion limit : No data is available on the product itself.

Vapour pressure : 0.06665 hPa (148.89 °C)

Relative vapour density : No data is available on the product itself.

Relative density : 1.12

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

 Water solubility : insoluble

 Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

 Viscosity : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : No data available

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity**Components:**

Bisphenol A epoxy resin:

Acute oral toxicityComponents : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

glycidylether of C12-C14 alcohols:

Acute oral toxicityComponents : LD50 (Rat, male): ca. 26.8 g/kg
Method: Other guidelines

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:

Acute oral toxicityComponents : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity

Components:

glycidylether of C12-C14 alcohols:

Acute inhalation toxicity : LC0 (Rat): > 0.15 mg/l
Exposure time: 7 h
Test atmosphere: vapour
Method: Other guidelines

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation**Product:**

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

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Respiratory or skin sensitisation**Product:**

Remarks: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity**Components:**

Bisphenol A epoxy resin:

Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Concentration: 0 - 5000 ug/plate

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

glycidylether of C12-C14 alcohols:

Genotoxicity in vitro

: Test Type: Ames test

Species: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

GLP: yes

Test Type: In vitro mammalian cell gene mutation test

Species: Chinese hamster ovary cells

Concentration: 0,5 - 5.000 µg/mL

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:

Genotoxicity in vitro

: Test Type: Chromosome aberration test in vitro

Species: Chinese hamster ovary cells

Concentration: 50 ug/plate

Metabolic activation: negative

Method: OECD Test Guideline 473

Result: positive

GLP: yes

Test Type: Ames test

Species: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Components:

Bisphenol A epoxy resin:

Genotoxicity in vivo

: Cell type: Germ

Application Route: Oral

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Method: OECD Test Guideline 478
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 0 - 5000 mg/kg
Method: OPPTS 870.5395
Result: negative

glycidylether of C12-C14 alcohols:

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Exposure time: 24 hr, 48 hr, and 72 hr
Method: OECD Test Guideline 474
Result: negative

Components:

Bisphenol A epoxy resin:
Germ cell mutagenicity-
Assessment : Weight of evidence does not support classification as a germ
cell mutagen.

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity**Components:**

Bisphenol A epoxy resin:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 24 month(s)
Dose: 15 mg/kg
Frequency of Treatment: 7 days/week
Method: OECD Test Guideline 453
Result: negative

Species: Mouse, (male)
Application Route: Dermal
Exposure time: 24 month(s)
Dose: 0.1 mg/kg
Frequency of Treatment: 3 days/week
Method: OECD Test Guideline 453
Result: negative

Species: Rat, (female)
Application Route: Dermal
Exposure time: 24 month(s)
Dose: 1 mg/kg
Frequency of Treatment: 5 days/week
Method: OECD Test Guideline 453
Result: negative

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Carcinogenicity - Assessment : No data available

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Components:**

Bisphenol A epoxy resin:
Effects on fertility

: Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Dose: >750 milligram per kilogram
General Toxicity - Parent: No-observed-effect level: 540 mg/kg body weight
General Toxicity F1: No-observed-effect level: 540 mg/kg body weight
Symptoms: No adverse effects
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

glycidylether of C12-C14 alcohols:

Species: Rat, male and female
Application Route: Dermal
Duration of Single Treatment: 13 Weeks
Frequency of Treatment: 5 days/week
General Toxicity - Parent: No observed adverse effect level: 100 mg/kg body weight
Method: OECD Test Guideline 411
GLP: yes

Components:

Bisphenol A epoxy resin:
Effects on foetal development

: Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: No observed adverse effect level: 30 mg/kg body weight
Method: Other guidelines
Result: No teratogenic effects

Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 60 mg/kg body weight

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Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

glycidylether of C12-C14 alcohols:

Species: Rat, female
Application Route: Dermal
Duration of Single Treatment: 6 h
General Toxicity Maternal: No observed adverse effect level:
200 mg/kg body weight
Developmental Toxicity: No observed adverse effect level:
200 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
GLP: yes

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

Bisphenol A epoxy resin:
Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Ingestion
Exposure time: 14 Weeks
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOEL: 10 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 5 d
Method: Subchronic toxicity

Species: Mouse, male
NOAEL: 100 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 3 d

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Method: Subchronic toxicity

glycidylether of C12-C14 alcohols:
Species: Rat, male and female
NOEL: 1 mg/kg
LOAEL: 10 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 5 days/week for 13 weeks
Method: OECD Test Guideline 411
GLP: yes

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:**

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Bisphenol A epoxy resin:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

glycidylether of C12-C14 alcohols:
Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Components:

Bisphenol A epoxy resin:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

glycidylether of C12-C14 alcohols:
Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 7.2 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): ca. 67.9 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Components:

Bisphenol A epoxy resin:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

glycidylether of C12-C14 alcohols:
Toxicity to algae : IC50 (Selenastrum capricornutum (green algae)): 843.75 mg/l
Exposure time: 72 h
Test Type: static test



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Method: OECD Test Guideline 201
GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:

Toxicity to algae : EbC50 (Selenastrum capricornutum (green algae)): ca. 9 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Components:

Bisphenol A epoxy resin:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.3 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

Components:

Bisphenol A epoxy resin:

Toxicity to bacteria : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water

glycidylether of C12-C14 alcohols:

Toxicity to bacteria : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:

Toxicity to bacteria : EC50: > 1,000 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209
GLP:

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

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Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
No data available

Persistence and degradability**Components:**

Bisphenol A epoxy resin:
Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

glycidylether of C12-C14 alcohols:
Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: Readily biodegradable
Biodegradation: 87 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:
Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 5 mg/l
Result: Not readily biodegradable.
Biodegradation: ca. 1.1 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

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BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Components:

Bisphenol A epoxy resin:

Stability in water : Degradation half life(DT50): 4.83 d (25 °C) pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh waterDegradation half life(DT50): 7.1 d (25 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh waterDegradation half life(DT50): 3.58 d (25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:

Stability in water : Degradation half life(DT50): 17 d (25 °C) pH: 7
Method: OECD Test Guideline 111
GLP: No information available.
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

Bisphenol A epoxy resin:

Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.**Components:**

Bisphenol A epoxy resin:

Partition coefficient: n-octanol/water : log Pow: 3.242 (25 °C)
pH: 7.1
Method: OECD Test Guideline 117

glycidylether of C12-C14 alcohols:

Partition coefficient: n-octanol/water : log Pow: 3.77 (20 °C)
Method: OECD Test Guideline 107

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p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:
 Partition coefficient: n-octanol/water : log Pow: 3.59 (20 °C)
 pH: 7
 Method: OECD Test Guideline 107

Mobility in soil

Mobility : No data available

Components:

Bisphenol A epoxy resin:
 Distribution among environmental compartments : Koc: 445
 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether:
 Distribution among environmental compartments : OECD Test Guideline 121
 log Koc: 2.88
 Method: OECD Test Guideline 121

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
 Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
 Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

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- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulation****IATA**

UN/ID No. : UN 3082
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
 (BISPHENOL A EPOXY RESIN)
 Class : 9
 Packing group : III
 Labels : Miscellaneous
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964

IMDG

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (BISPHENOL A EPOXY RESIN)
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**DOT Classification**

UN/ID/NA number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (BISPHENOL A EPOXY RESIN)
 Class : 9
 Packing group : III

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Labels	: CLASS 9
ERG Code	: 171
Marine pollutant	: yes(BISPHENOL A EPOXY RESIN)

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act**

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

CH INV	: The formulation contains substances listed on the Swiss Inventory, Not in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory
DSL	: This product contains one or several components listed in the Canadian NDSL.
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

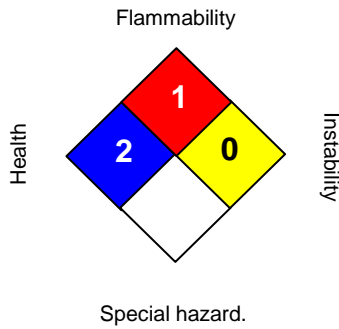
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SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

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The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.

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SECTION 1. IDENTIFICATION

Product name : REN-WELD® 103 HARDENER US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
 Address : 2795 Slough Avenue
 Mississauga, ON L4T 1G2,
 Canada
 Telephone : +1 905 678 9150
 E-mail address of person responsible for the SDS : MSDS@huntsman.com
 Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Hardener

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the Hazardous Products Regulations**

Skin corrosion : Category 2
 Serious eye damage : Category 1
 Skin sensitisation : Category 1
 Reproductive toxicity : Category 2
 Acute aquatic toxicity : Category 2
 Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H361 Suspected of damaging fertility or the unborn child.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
 P201 Obtain special instructions before use.

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

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

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

P273 Avoid release to the environment.

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

Response:

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.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310 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.

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

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

P362 + P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Triethylenetetramine, propoxylated	26950-63-0	53 - 55
trientine	112-24-3	35 - 37
salicylic acid	69-72-7	9 - 11
Phenol, 4-nonyl-, branched	84852-15-3	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.

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- Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : No data is available on the product itself.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No data is available on the product itself.
- Specific extinguishing methods : No data is available on the product itself.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must

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be disposed of in accordance with local regulations.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipment

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- | | |
|----------------------------|---|
| Respiratory protection | : No personal respiratory protective equipment normally required. |
| Respiratory protection | : In the case of vapour formation use a respirator with an approved filter. |
| Hand protection
Remarks | : The suitability for a specific workplace should be discussed with the producers of the protective gloves. |
| Eye protection | : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems. |
| Skin and body protection | : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place. |
| Hygiene measures | : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|---------------------------|---|
| Appearance | : liquid |
| Colour | : amber |
| Odour | : slight, ammoniacal |
| Odour Threshold | : No data is available on the product itself. |
| pH | : No data is available on the product itself. |
| Freezing point | : No data is available on the product itself. |
| Melting point | : No data is available on the product itself. |
| Boiling point | : No data is available on the product itself. |
| Flash point | : > 171 °C
Method: open cup |
| Evaporation rate | : No data is available on the product itself. |
| Flammability (solid, gas) | : No data is available on the product itself. |
| Flammability (liquids) | : No data is available on the product itself. |
| Upper explosion limit | : No data is available on the product itself. |
| Lower explosion limit | : No data is available on the product itself. |
| Vapour pressure | : No data is available on the product itself. |

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Relative vapour density : No data is available on the product itself.

Relative density : 1.02 - 1.06

Density : 1.02 - 1.06 g/cm³

Solubility(ies)
Water solubility : partly soluble

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity : No data is available on the product itself.

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

Particle size : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : 2,283 mg/kg
Method: Calculation method

Acute inhalation toxicity : No data available

Acute dermal toxicity - Product : Acute toxicity estimate : 2,192 mg/kg
Method: Calculation method

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Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation**Product:**

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation**Product:**

Remarks: Causes sensitisation.

Components:

Phenol, 4-nonyl-, branched:

Assessment: Causes severe skin burns and eye damage.

Germ cell mutagenicity**Components:**

Triethylenetetramine, propoxylated:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Species: Chinese hamster ovary cells
Method: OECD Test Guideline 476
Result: negative

Test Type: Ames test
Species: Salmonella typhimurium
Method: OECD Test Guideline 471
Result: positive

Test Type: Chromosome aberration test in vitro
Species: Chinese hamster ovary cells
Method: OECD Test Guideline 473
Result: negative

trientine:

Genotoxicity in vitro : Concentration: 0 - 200 µg/L
Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Components:

trientine:

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 0 - 600 mg/kg
Method: OECD Test Guideline 474

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Result: negative

Components:

Triethylenetetramine, propoxylated:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.Germ cell mutagenicity-
Assessment : No data available**Carcinogenicity****Components:**

trientine:

Species: Mouse, (male)

Application Route: Dermal

Dose: 42 mg/kg

Frequency of Treatment: 3 days/week

Method: OECD Test Guideline 451

Result: negative

Species: Mouse, (male)

Application Route: Dermal

Exposure time: 104 weeks

Dose: 16.8 mg/kg

Frequency of Treatment: 3 days/week

Method: OECD Test Guideline 451

salicylic acid:

Species: Rat, (male and female)

Application Route: Oral

Exposure time: 24 month(s)

Dose: 500 mg/kg

Frequency of Treatment: 7 daily

Result: negative

Carcinogenicity -
Assessment : No data available**ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity**Components:**

Triethylenetetramine, propoxylated:

Effects on fertility

: Test Type: Fertility

Species: Rat, male and female

Strain: wistar

Application Route: Ingestion

Dose: 100, 300 and 750 milligram per kilogram

General Toxicity - Parent: No-observed-effect level: Measured
750 mg/kg body weight

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General Toxicity F1: No-observed-effect level: Measured 750 mg/kg body weight

Method: OECD Test Guideline 422

salicylic acid:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 416

Species: Mouse

Application Route: Oral

Method: OECD Test Guideline 416

Components:

Triethylenetetramine, propoxylated:

Effects on foetal development

: Species: Rat, male and female

Strain: wistar

Application Route: Ingestion

Dose: 100, 300 and 750 milligram per kilogram

General Toxicity Maternal: No-observed-effect level:

Measured 300 mg/kg body weight

Developmental Toxicity: No observed adverse effect level:

Measured 750 mg/kg body weight

Method: OECD Test Guideline 422

trientine:

Species: Rat

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: > 750 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

Species: Rabbit

Application Route: Dermal

General Toxicity Maternal: No observed adverse effect level: 125 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

salicylic acid:

Species: Rabbit, female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: 125 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

Phenol, 4-nonyl-, branched:

Species: Rat, female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: 75 mg/kg body weight

Method: OECD Test Guideline 414

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Result: No teratogenic effects

Components:

Triethylenetetramine, propoxylated:

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Phenol, 4-nonyl-, branched:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

STOT - single exposure

No data available

STOT - repeated exposure**Components:**

Triethylenetetramine, propoxylated:

Exposure routes: Ingestion

Target Organs: Kidney

Assessment: No significant health effects observed at a concentration of 300mg/kg bw/day.

Repeated dose toxicity**Components:**

Triethylenetetramine, propoxylated:

Species: Rat, male and female

NOAEL: 300 mg/kg

Application Route: Ingestion

Exposure time: 43 - 44 Days

Method: OECD Test Guideline 422

trientine:

Species: Rat, male and female

NOAEL: 50 mg/kg/d

Application Route: Ingestion

Exposure time: 26 Weeks

Number of exposures: 7 d

Method: Subchronic toxicity

salicylic acid:

Species: Dog, male and female

: 700 mg/m³

Application Route: Ingestion

Test atmosphere: vapour

Exposure time: 4 Weeks

Number of exposures: 6 d

Method: OECD Test Guideline 412

Species: Rat, male and female

LOAEL: 250 mg/kg

Application Route: Ingestion

Exposure time: 2 yr

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Number of exposures: 7 d
Method: Chronic toxicity

Phenol, 4-nonyl-, branched:
Species: Rat, male and female
NOAEL: 100 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d
Method: Subacute toxicity

Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Ingestion
Exposure time: 2,160 h
Number of exposures: 7 d
Method: Subchronic toxicity

Components:

Phenol, 4-nonyl-, branched:
Repeated dose toxicity - Assessment : Causes severe skin burns and eye damage.

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: No data available

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Other health hazards

No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:**

Triethylenetetramine, propoxylated:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): Measured > 4.1 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Analytical monitoring: yes
 Method: OECD Test Guideline 203

trientine:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
 Exposure time: 96 h
 Test Type: static test
 Test substance: Fresh water
 Method: Fish Acute Toxicity Test

salicylic acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1,370 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 Method: OECD Test Guideline 203

Phenol, 4-nonyl-, branched:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.128 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 Method: ASTM Method, other

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.209 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 Method: ASTM Method, other

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.221 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 Method: ASTM Method, other

Components:

Triethylenetetramine, propoxylated:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): Measured 48 mg/l

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aquatic invertebrates Exposure time: 48 h
 Test Type: static test
 Analytical monitoring: yes
 Method: OECD Test Guideline 202

trientine:
 Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
 aquatic invertebrates Exposure time: 48 h
 Test Type: static test
 Test substance: Fresh water
 Method: Directive 67/548/EEC, Annex V, C.2.

salicylic acid:
 Toxicity to daphnia and other : EC50: 870 mg/l
 aquatic invertebrates Exposure time: 48 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Phenol, 4-nonyl-, branched:
 Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.085 mg/l
 aquatic invertebrates Exposure time: 48 h
 Test Type: static test
 Test substance: Fresh water
 Method: ASTM Method, other

EC50 (Daphnia magna (Water flea)): 0.14 mg/l
 Exposure time: 48 h
 Test substance: Fresh water
 Method: Directive 67/548/EEC, Annex V, C.2.

Components:

Triethylenetetramine, propoxylated:
 Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (algae)): Measured 4.1 mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Method: OECD Test Guideline 201

ErC10 (Pseudokirchneriella subcapitata (algae)): Measured 0.11 mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Method: OECD Test Guideline 201

trientine:
 Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
 Exposure time: 72 h
 Test Type: semi-static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

salicylic acid:

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Toxicity to algae : EC50: > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Phenol, 4-nonyl-, branched:
Toxicity to algae : EbC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 1.3 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water

ErC50 (Selenastrum capricornutum (green algae)): 0.41 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Algal Toxicity, Tiers I and II

Components:

Phenol, 4-nonyl-, branched:
M-Factor (Acute aquatic toxicity) : 10

Components:

Phenol, 4-nonyl-, branched:
Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.006 mg/l
Exposure time: 91 d
Test Type: flow-through test
Test substance: Fresh water

Components:

trientine:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 1.9 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

salicylic acid:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity) : No data available

Components:

Triethylenetetramine, propoxylated:
Toxicity to microorganisms : EC10 (activated sludge): 38 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

trientine:



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Toxicity to microorganisms : EC50 (activated sludge): 800 mg/l
 Exposure time: 0.5 h
 Test Type: static test
 Test substance: Fresh water

salicylic acid:
 Toxicity to microorganisms : EC50 (Pseudomonas putida): 380 mg/l
 Exposure time: 16 h
 Test Type: static test
 Test substance: Fresh water
 Method: Cell multiplication inhibition test

Phenol, 4-nonyl-, branched:
 Toxicity to microorganisms : EC50 (activated sludge): 950 mg/l
 Exposure time: 3 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 209

Components:

Phenol, 4-nonyl-, branched:
 Toxicity to soil dwelling organisms : EC10: 3.44 mg/kg
 Exposure time: 504 h
 EC50 (Other): 906.7 mg/kg
 Exposure time: 4 Weeks
 Test substance: Synthetic

Components:

salicylic acid:
 Plant toxicity : NOEC: Exposure time: 120 h
 Remarks: see user defined free text

Sediment toxicity : No data available

Components:

Phenol, 4-nonyl-, branched:
 Toxicity to terrestrial organisms : EC10: 63.2 mg/kg
 Exposure time: 672 h
 Test substance: Synthetic

Ecotoxicology Assessment
 Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

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Triethylenetetramine, propoxylated:

Biodegradability : Inoculum: Domestic sewage
 Concentration: 100 mg/l
 Result: Not readily biodegradable.
 Biodegradation: 4 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301F

trientine:

Biodegradability : Inoculum: activated sludge
 Result: Not readily biodegradable.
 Biodegradation: 0 %
 Exposure time: 162 d
 Method: OECD Test Guideline 301D

Inoculum: activated sludge
 Result: Not readily biodegradable.
 Biodegradation: 20 %
 Exposure time: 84 d
 Method: Inherent Biodegradability: Modified SCAS Test

salicylic acid:

Biodegradability : Inoculum: Mixture
 Result: Readily biodegradable.
 Biodegradation: 88.1 %
 Exposure time: 14 d
 Method: OECD Test Guideline 301C

Phenol, 4-nonyl-, branched:

Biodegradability : Inoculum: activated sludge
 Concentration: 13 mg/l
 Result: Inherently biodegradable.
 Biodegradation: ca. 48.2 %
 Exposure time: 35 d
 Method: OECD Test Guideline 301B

Inoculum: Sediment
 Concentration: 2
 Result: Inherently biodegradable.
 Biodegradation: 100 %
 Exposure time: 63 - 84 d
 Method: Anaerobic Biodegradability in the Subsurface

Inoculum: Marine water
 Concentration: 11
 Biodegradation: 50 %
 Exposure time: 56 - 112 d
 Method: OECD Test Guideline 309

Components:

salicylic acid:
 Biochemical Oxygen Demand (BOD) : 950 mgO₂/g
 Method: Directive 67/548/EEC, Annex V, C.5

Components:

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salicylic acid:
 Chemical Oxygen Demand : 1580 mgO₂/g
 (COD)
 BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon : No data available
 (DOC)

Physico-chemical : No data available
 removability

Components:

Triethylenetetramine, propoxylated:

Stability in water : Degradation half life(DT50): > 1 yr (25 °C) pH: 4
 Method: OECD Test Guideline 111

Degradation half life(DT50): > 1 yr (25 °C) pH: 7
 Method: OECD Test Guideline 111

Degradation half life(DT50): > 1 yr (25 °C) pH: 9
 Method: OECD Test Guideline 111

Photodegradation : No data available

Impact on Sewage : No data available
 Treatment

Bioaccumulative potential**Components:**

Phenol, 4-nonyl-, branched:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
 Bioconcentration factor (BCF): 231
 Remarks: Does not bioaccumulate.

Species: Pimephales promelas (fathead minnow)
 Bioconcentration factor (BCF): 740
 Remarks: Bioaccumulation is unlikely.

Components:

Triethylenetetramine, propoxylated:

Partition coefficient: n- : log Pow: -2.42
 octanol/water

trientine:

Partition coefficient: n- : log Pow: -2.65 (20 °C)
 octanol/water Method: OECD Test Guideline 117

salicylic acid:

Partition coefficient: n- : log Pow: 2.25 (25 °C)

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octanol/water Method: OECD Test Guideline 117

Phenol, 4-nonyl-, branched:
Partition coefficient: n-
octanol/water : log Pow: 5.4 (23 °C)
pH: 5.7
Method: OECD Test Guideline 117

Mobility in soil

Mobility : No data available

Components:

trientine:
Distribution among : Koc: 1584.9 - 5012Method: OECD Test Guideline 106
environmental compartments
salicylic acid:
Distribution among : Koc: 35Method: OECD Test Guideline 121
environmental compartments
Phenol, 4-nonyl-, branched:
Distribution among : Koc: 23000 - 489000
environmental compartments
Stability in soil : No data available

Other adverse effects

Environmental fate and : No data available
pathways

Components:

Triethylenetetramine, propoxylated:
Results of PBT and vPvB : This substance is not considered to be persistent,
assessment bioaccumulating and toxic (PBT).
Endocrine disrupting : No data available
potential
Adsorbed organic bound : No data available
halogens (AOX)

Hazardous to the ozone layer

Ozone-Depletion Potential Not applicable

Additional ecological : An environmental hazard cannot be excluded in the event of
information - Product unprofessional handling or disposal.
Toxic to aquatic life.
Toxic to aquatic life with long lasting effects.
Harmful to aquatic life with long lasting effects.

Global warming potential : No data available
(GWP)

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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations****TDG**

- UN number : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIETHYLENE TETRAMINE PROPOXYLATED)
- Class : 9
- Packing group : III
- Labels : 9

IATA

- UN/ID No. : UN 3082
- Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(TRIETHYLENE TETRAMINE PROPOXYLATED)
- Class : 9
- Packing group : III
- Labels : Miscellaneous
- Packing instruction (cargo aircraft) : 964
- Packing instruction (passenger aircraft) : 964

IMDG

- UN number : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIETHYLENE TETRAMINE PROPOXYLATED)
- Class : 9
- Packing group : III
- Labels : 9
- EmS Code : F-A, S-F
- Marine pollutant : yes

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**TDG**

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIETHYLENE TETRAMINE PROPOXYLATED)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes(TRIETHYLENE TETRAMINE PROPOXYLATED)
Remarks	:	Different package sizes may lead to a non-regulated classification, Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

SECTION 15. REGULATORY INFORMATION**The components of this product are reported in the following inventories:**

CH INV	:	The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

Canada. CEPA 1999 Significant New Activity (SNAc) List

No substances are subject to a Significant New Activity Notification.

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SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS® IV:**

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		1

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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