

RENLAM® 5052 US

Version 1.0 Revision Date: 11/09/2018 SDS Number: 400001014052 Date of last issue: -
Date of first issue: 11/09/2018

SECTION 1. IDENTIFICATION

Product name : RENLAM® 5052 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 (USA)
Telephone : Non-Emergency: (800) 257-5547
E-mail address of person responsible for the SDS : SDS@huntsman.com
Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Epoxy constituents
Restrictions on use : For industrial use only.

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Serious eye damage : Category 1
Skin sensitisation : Category 1
Short-term (acute) aquatic hazard : Category 2
Long-term (chronic) aquatic hazard : Category 2

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H315 Causes skin irritation.

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H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H332 Harmful if inhaled.
 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.
 P271 Use only outdoors or in a well-ventilated area.
 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.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

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.

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

P362 Take off contaminated clothing and wash before reuse.
 P391 Collect spillage.

Storage:

Not available

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Epoxyphenol Novolac Resin	28064-14-4	50 - 70
1,4-bis(2,3-epoxypropoxy)butane	2425-79-8	30 - 50

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

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.

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- Show this safety data sheet to the doctor in attendance.
 Treat symptomatically.
 Get medical attention if symptoms occur.
- If inhaled : Consult a physician after significant exposure.
 If inhaled, remove to fresh air.
 Get medical attention if symptoms occur.
- 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 : 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.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
 Do NOT induce vomiting.
 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.
- Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 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 : Carbon dioxide (CO₂)
 Carbon monoxide
 Carbon oxides
- 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.

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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.
Ensure adequate ventilation.
Refer to protective measures listed in sections 7 and 8.

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 : Avoid formation of aerosol.
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.
Provide sufficient air exchange and/or exhaust in work rooms.
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.
Keep in properly labelled containers.

Materials to avoid : For incompatible materials please refer to Section 10 of this SDS.

Further information on storage stability : Stable under normal conditions.

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

Contains no substances with occupational exposure limit values.

Personal protective equipment

- 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 : Clear
- Odour : slight
- Odour Threshold : No data is available on the product itself.
- pH : 7
- Freezing point : No data is available on the product itself.
- Melting point : No data is available on the product itself.
- Boiling point : > 392 °F / > 200 °C
- Flash point : > 284 °F / > 140 °C
Method: Pensky-Martens 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 / Upper : No data is available on the product itself.

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flammability limit

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

Vapour pressure : > 0.002 hPa (68 °F / 20 °C)

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

Relative density : 1.16 - 1.18 (68 °F / 20 °C)

Density : 1.16 - 1.18 g/cm³ (68 °F / 20 °C)

Solubility(ies)

Water solubility : No data is available on the product itself.

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.

Decomposition temperature : > 392 °F / > 200 °C

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

Viscosity

Viscosity, dynamic : 1,000 - 1,500 mPa.s (77 °F / 25 °C)

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 dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : Strong acids
Strong oxidizing agentsHazardous decomposition products : carbon dioxide
carbon monoxide

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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 : 3,326 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 4.29 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 3,146 mg/kg
Method: Calculation method

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

Skin corrosion/irritation**Components:**

Epoxyphenol Novolac Resin:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

1,4-bis(2,3-epoxypropoxy)butane:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Serious eye damage/eye irritation**Components:**

Epoxyphenol Novolac Resin:
Species: Rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

1,4-bis(2,3-epoxypropoxy)butane:
Species: Rabbit
Result: Risk of serious damage to eyes.
Method: OECD Test Guideline 405

Respiratory or skin sensitisation**Components:**

Epoxyphenol Novolac Resin:
Exposure routes: Skin
Species: Mouse

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Method: OECD Test Guideline 429
 Result: May cause sensitisation by skin contact.

1,4-bis(2,3-epoxypropoxy)butane:
 Exposure routes: Skin
 Species: Guinea pig
 Method: OECD Test Guideline 406
 Result: May cause sensitisation by skin contact.

Assessment: No data available

Germ cell mutagenicity**Components:**

Epoxyphenol Novolac Resin:
 Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
 Result: positive

Concentration: 0 - 5000 ug/plate
 Metabolic activation: with and without metabolic activation
 Result: positive

1,4-bis(2,3-epoxypropoxy)butane:
 Genotoxicity in vitro : Concentration: 10 - 5000 ug/plate
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: positive
 Remarks: Not classified due to data which are conclusive although insufficient for classification.

Concentration: 1 - 100 µg/L
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: positive
 Remarks: Not classified due to data which are conclusive although insufficient for classification.

Components:

Epoxyphenol Novolac Resin:
 Genotoxicity in vivo : Cell type: Germ
 Application Route: Oral
 Result: negative

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

1,4-bis(2,3-epoxypropoxy)butane:
 Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Mouse
 Cell type: Somatic
 Application Route: Oral
 Exposure time: 4 d
 Dose: 187.5 - 750 mg/kg

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Method: OECD Test Guideline 474
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Cell type: Liver cells
Application Route: Oral
Method: OECD Test Guideline 486
Result: negative

Components:

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

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:**

Epoxyphenol Novolac Resin:

Species: Rat, male and female

Application Route: Oral

Exposure time: 24 month(s)

Dose: 15 mg/kg

Frequency of Treatment: 7 daily

Method: OECD Test Guideline 453

Result: negative

Species: Mouse, male

Application Route: Dermal

Exposure time: 24 month(s)

Dose: .1 mg/kg

Frequency of Treatment: 3 daily

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 daily

Method: OECD Test Guideline 453

Result: negative

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.

ACGIH

No component of this product present at levels greater than or

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equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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:**

Epoxyphenol Novolac Resin:
 Effects on fertility

: Species: Rat, male and female
 Application Route: Oral
 Method: OECD Test Guideline 416
 Result: No effects on fertility and early embryonic development were detected.

Components:

Epoxyphenol Novolac Resin:
 Effects on foetal development

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

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

Reproductive toxicity -
 Assessment

: No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

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Repeated dose toxicity**Components:**

Epoxyphenol Novolac 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
Method: Subchronic toxicity

1,4-bis(2,3-epoxypropoxy)butane:
Species: Rat, male and female
NOAEL: 200 mg/kg
Application Route: Ingestion
Exposure time: 28 d
Number of exposures: 7 d
Method: Subacute toxicity

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

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Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

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

Epoxyphenol Novolac 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

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

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 24 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Components:

Epoxyphenol Novolac Resin:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

EC50 (Daphnia magna (Water flea)): 2.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 75 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

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Components:

Epoxyphenol Novolac 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

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

Toxicity to algae : EL50: > 160 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

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

Components:

Epoxyphenol Novolac Resin:

Toxicity to fish (Chronic toxicity) : GLP: yes

Components:

Epoxyphenol Novolac 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:

Epoxyphenol Novolac Resin:

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

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

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
 Exposure time: 3 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial : No data available

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organisms

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:**

Epoxyphenol Novolac 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

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

Biodegradability : Inoculum: activated sludge
 Concentration: 20 mg/l
 Result: Not readily biodegradable.
 Biodegradation: 43 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301F

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

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:

Epoxyphenol Novolac Resin:

Stability in water : Degradation half life(DT50): 4.83 d (77 °F / 25 °C) pH: 4
 Method: OECD Test Guideline 111
 Remarks: Fresh water

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Degradation half life(DT50): 7.1 d (77 °F / 25 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 3.58 d (77 °F / 25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Components:

Epoxyphenol Novolac Resin:
Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.

Components:

Epoxyphenol Novolac Resin:
Partition coefficient: n-octanol/water : log Pow: 3.242 (77 °F / 25 °C)
pH: 7.1
Method: OECD Test Guideline 117

1,4-bis(2,3-epoxypropoxy)butane:
Partition coefficient: n-octanol/water : log Pow: -0.269 (77 °F / 25 °C)
pH: 6.7
Method: OECD Test Guideline 117

Mobility in soil

Mobility : No data available

Components:

Epoxyphenol Novolac Resin:
Distribution among environmental compartments : Koc: 445
1,4-bis(2,3-epoxypropoxy)butane:
Distribution among environmental compartments : Koc: 12.59
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 : No data available

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potential

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

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.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of contents/ container to an approved waste disposal plant.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(EPOXY PHENOL NOVOLAC RESIN)
Class : 9
Packing group : III
Labels : Miscellaneous

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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. (EPOXY PHENOL NOVOLAC 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. (EPOXY PHENOL NOVOLAC RESIN)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes(EPOXY PHENOL NOVOLAC RESIN)

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation

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.

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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, 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	: Not in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or 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
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)

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.

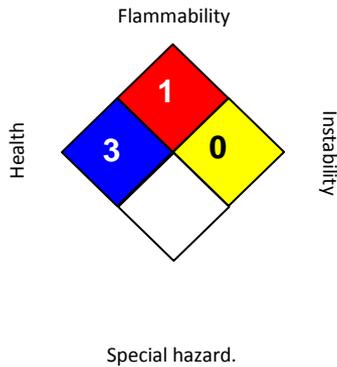
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SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH		3
FLAMMABILITY		1
PHYSICAL HAZARD		0

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.

Revision Date : 11/09/2018

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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SECTION 1. IDENTIFICATION

Product name : REN® 5052 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 (USA)
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 : Hardener

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 3
Acute toxicity (Dermal) : Category 3
Skin corrosion : Category 1B
Serious eye damage : Category 1
Skin sensitisation : Category 1
Acute aquatic toxicity : Category 3
Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H311 + H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.

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H317 May cause an allergic skin reaction.
H402 Harmful to aquatic life.
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.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
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 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
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 + 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.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	50 - 70
isophorone diamine	2855-13-2	30 - 50
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	2.5 - 3

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salicylic acid	69-72-7	1 - 3
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The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
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.
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.
- Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

SECTION 5. FIREFIGHTING MEASURES

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

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- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : No data is available on the product itself.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
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 : Neutralise with acid.
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

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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.
- Materials to avoid : Strong acids
Strong bases
Strong oxidizing agents
- Recommended storage temperature : 2 - 40 °C

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

Contains no substances with occupational exposure limit values.

- Engineering measures** : Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Solvent-resistant gloves (butyl-rubber)

Nitrile rubber

10 - 480 min

- 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.

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Hygiene measures : Avoid contact with skin, eyes and clothing.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear

Odour : slight

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

pH : 11 - 12 (20 °C)
Concentration: 500 g/l

Melting point/freezing point : No data available

Boiling point : 135 °C

Flash point : > 110 °C
Method: Pensky-Martens closed cup, 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 : < 0.012 hPa (20 °C)

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

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

Density : 0.93 - 0.95 g/cm³ (25 °C)

Solubility(ies)

Water solubility : partly soluble (20 °C)

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.

Decomposition temperature : > 200 °C

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

Viscosity
Viscosity, dynamic : 40 - 60 mPa.s (25 °C)

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

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

Molecular weight : No data available

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.
No decomposition if stored and applied as directed.

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

Conditions to avoid : Heat, flames and sparks.
No data available

Incompatible materials : Strong acids and strong bases
Strong oxidizing agents

Hazardous decomposition products : Carbon oxides
Burning produces noxious and toxic fumes.
Nitrogen oxides (NOx)

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 : 658.4 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 0.76 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

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Acute dermal toxicity - Product : Acute toxicity estimate : 501.68 mg/kg
Method: Calculation method

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.

Assessment: No data available

Germ cell mutagenicity**Components:**

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Species: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Species: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Ames test
Species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

2,4,6-tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473

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Result: negative

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

Genotoxicity in vivo : No data available

Carcinogenicity**Components:**

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

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.

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.

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:**

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Effects on fertility

: Species: Rat, male and female

Application Route: Oral

Dose: 0, 15, 50 and 100 mg/kg/day

Frequency of Treatment: 7 days/week

General Toxicity - Parent: No observed adverse effect level:
15 mg/kg body weightGeneral Toxicity F1: No observed adverse effect level: 15
mg/kg body weight

Method: OECD Test Guideline 422

2,4,6-tris(dimethylaminomethyl)phenol:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 422

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Remarks: No significant adverse effects were reported

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:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Effects on foetal
development

: Species: Rat
Application Route: Oral
Dose: 5, 15 and 45 mg/kg bw /day
Frequency of Treatment: 7 days/week
General Toxicity Maternal: No observed adverse effect level: 5
mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 45
mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

isophorone diamine:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No-observed-effect level: 50 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

Reproductive toxicity -
Assessment

: No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

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Species: Rat, male and female
: 12 mg/m³
Application Route: Inhalation
Test atmosphere: vapour
Number of exposures: 5 days/week
Method: OECD Test Guideline 413

Species: Rat, male and female
NOAEL: 2.5 mg/kg
Application Route: oral (gavage)
Exposure time: 3 months
Number of exposures: 5 days/week
Dose: 2.5, 12, 60 mg/kg bw/day
Method: OECD Test Guideline 408
Target Organs: Liver, Blood, Kidney, Adrenal gland, Heart

isophorone diamine:
Species: Rat, male and female
: 60 mg/kg, 200 mg/m³
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 216 h
Number of exposures: 6 h
Method: Subchronic toxicity

2,4,6-tris(dimethylaminomethyl)phenol:
Species: Rat, male and female
NOEL: 15 mg/kg
Application Route: Ingestion
Exposure time: 1,032 h
Number of exposures: 7 d
Method: Subacute 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
Number of exposures: 7 d
Method: Chronic toxicity

Repeated dose toxicity - : No data available
Assessment


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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:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 22.4 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203

isophorone diamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Test substance: Fresh water
 Method: Directive 67/548/EEC, Annex V, C.1.

2,4,6-tris(dimethylaminomethyl)phenol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l
 Exposure time: 96 h

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Test Type: static test
Test substance: Fresh water

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

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4.57 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

isophorone diamine:
Toxicity to daphnia and other aquatic invertebrates : EC50: 23 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

2,4,6-tris(dimethylaminomethyl)phenol:
Toxicity to daphnia and other aquatic invertebrates : LC50: 718 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Marine water

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

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Toxicity to algae : EC50 (Other): 7.9 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

isophorone diamine:
Toxicity to algae : EC50: 37 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

2,4,6-tris(dimethylaminomethyl)phenol:
Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus

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subspicatus)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (Scenedesmus subspicatus)): 6.25 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

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

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

Toxicity to fish (Chronic toxicity) : No data available

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 4 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211

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:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Toxicity to microorganisms : EC20 (activated sludge): 160 mg/l
Exposure time: 30 min
Test Type: static test
Method: ISO 8192

isophorone diamine:
Toxicity to microorganisms : EC10: 1,120 mg/l
Exposure time: 18 h
Method: Measured

: (Pseudomonas putida): 1,120 mg/l
Exposure time: 18 h
Test Type: static test
Test substance: Fresh water

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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

Toxicity to soil dwelling organisms : No data available

Components:

salicylic acid:

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

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

2,4,6-tris(dimethylaminomethyl)phenol:

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Inoculum: activated sludge
Result: Not biodegradable
Biodegradation: < 1 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

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isophorone diamine:
Biodegradability : Inoculum: activated sludge
Concentration: 6.9 mg/l
Result: Not readily biodegradable.
Biodegradation: 8 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.A.

2,4,6-tris(dimethylaminomethyl)phenol:
Biodegradability : Inoculum: activated sludge
Concentration: 2 mg/l
Result: Not readily biodegradable.
Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

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

Components:

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

Components:

salicylic acid:
Chemical Oxygen Demand (COD) : 1580 mgO₂/g
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
Stability in water : No data available
Photodegradation : No data available
Impact on Sewage Treatment : No data available

Bioaccumulative potential

Components:

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2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): < 60
Exposure time: 28 d
Test substance: Fresh water
Method: flow-through test
Remarks: Does not bioaccumulate.

Components:**2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):**

Partition coefficient: n-octanol/water : log Pow: 2.3 (23 °C)
pH: 10
Method: OECD Test Guideline 107

isophorone diamine:

Partition coefficient: n-octanol/water : log Pow: 0.99 (23 °C)
pH: 6.34
Method: OECD Test Guideline 107

2,4,6-tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water : log Pow: 0.219 (21.5 °C)
Method: OPPTS 830.7550

salicylic acid:

Partition coefficient: n-octanol/water : log Pow: 2.25 (25 °C)
Method: OECD Test Guideline 117

Mobility in soil

Mobility : No data available

Components:**2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):**

Distribution among environmental compartments : Koc: 1195

isophorone diamine:

Distribution among environmental compartments : Koc: 928

salicylic acid:

Distribution among environmental compartments : Koc: 35
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 : No data available

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halogens (AOX)

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.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

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****IATA**

UN/ID No. : UN 2922
Proper shipping name : Corrosive liquid, toxic, n.o.s.
(CYCLOALIPHATIC POLYAMINE, ISOPHORONE DIAMINE)
Class : 8
Subsidiary risk : 6.1
Packing group : II
Labels : Corrosive, Toxic
Packing instruction (cargo
aircraft) : 855
Packing instruction
(passenger aircraft) : 851

SAFETY DATA SHEET

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IMDG

UN number	: UN 2922
Proper shipping name	: CORROSIVE LIQUID, TOXIC, N.O.S. (CYCLOALIPHATIC POLYAMINE, ISOPHORONE DIAMINE)
Class	: 8
Subsidiary risk	: 6.1
Packing group	: II
Labels	: 8 (6.1)
EmS Code	: F-A, S-B
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 2922
Proper shipping name	: CORROSIVE LIQUIDS, TOXIC, N.O.S. (CYCLOALIPHATIC POLYAMINE, ISOPHORONE DIAMINE)
Class	: 8
Subsidiary risk	: 6.1
Packing group	: II
Labels	: CORROSIVE, POISON
ERG Code	: 154
Marine pollutant	: yes

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

WARNING! This product contains a chemical known to the State of California to cause cancer.
4,4'-methylenedi-o-toluidine 838-88-0

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

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AICS : On the inventory, or in compliance with the inventory
NZIoC : not determined
ENCS : On the inventory, or in compliance with the inventory
KECI : On the inventory, or 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
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)

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

No substances are subject to a Significant New Use Rule.

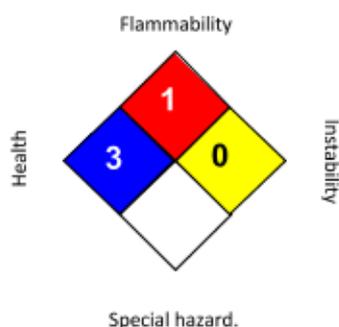
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HEALTH		3
FLAMMABILITY		1
PHYSICAL HAZARD		0

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.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Sources of key data used to compile the Safety Data Sheet : Information taken from reference works and the literature.,
Information derived from practical experience.

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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.

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