

**RENCAST® 3253 US**

Version	Revision Date:	SDS Number:	Date of last issue:
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			Date of first issue: 07/27/2016

SECTION 1. IDENTIFICATION

Product name : RENCAST® 3253 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 resin solution

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

Flammable liquids : Category 4
 Skin irritation : Category 2
 Eye irritation : Category 2A
 Skin sensitisation : Category 1
 Germ cell mutagenicity : Category 2
 Carcinogenicity : Category 2
 Short-term (acute) aquatic hazard : Category 3
 Long-term (chronic) aquatic hazard : Category 3

GHS label elements

Hazard pictograms :

Signal word : Warning

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- Hazard statements** :
- H227 Combustible liquid.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H341 Suspected of causing genetic defects.
 - H351 Suspected of causing cancer.
 - H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements** :
- Prevention:**
- P201 Obtain special instructions before use.
 - P202 Do not handle until all safety precautions have been read and understood.
 - P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 - P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 - P264 Wash skin thoroughly after handling.
 - P272 Contaminated work clothing must not be allowed out of the workplace.
 - P273 Avoid release to the environment.
 - P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- 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.
 - P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 - 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.
 - P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- Storage:**
- P403 + P235 Store in a well-ventilated place. Keep cool.
 - 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'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1675-54-3	13 - 30

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limestone	1317-65-3	13 - 30
butyl 2,3-epoxypropyl ether	2426-08-6	1 - 3

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

Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : 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 : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
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 : Carbon dioxide (CO₂)
- 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 : Carbon oxides

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| products | : Halogenated compounds |
| 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.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers. |
| 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.
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 | : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal. |

SECTION 7. HANDLING AND STORAGE

- | | |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on protection against fire and explosion | : Do not spray on a naked flame or any incandescent material.
Keep away from open flames, hot surfaces and sources of ignition. |
| 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.
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. |

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- Conditions for safe storage : No smoking.
Keep in a well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
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.

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
limestone	1317-65-3	TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
butyl 2,3-epoxypropyl ether	2426-08-6	TWA	3 ppm	ACGIH
		TWA	50 ppm 270 mg/m ³	OSHA Z-1

Personal protective equipment

- Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
- 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

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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	: black
Odour	: slight
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	: > 199.99 °F / > 93.33 °C
Flash point	: 171.00 °F / 77.22 °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 / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: 2.8 - 3.07
Density	: No data is available on the product itself.
Solubility(ies)	
Water solubility	: negligible

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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 dangerous reaction known under conditions of normal use. No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions. Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air. No decomposition if stored and applied as directed. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No hazardous decomposition products are known.
Hazardous decomposition products	:	carbon dioxide carbon monoxide Halogenated compounds

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 : > 5,000 mg/kg

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Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 60.88 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

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

Skin corrosion/irritation**Components:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Species: Rabbit
Assessment: Mild skin irritant
Method: OECD Test Guideline 404
Result: Irritating to skin.

butyl 2,3-epoxypropyl ether:
Species: Rabbit
Result: No skin irritation

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

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Species: Rabbit
Result: Irritating to eyes.
Assessment: Mild eye irritant
Method: OECD Test Guideline 405

limestone:
Species: Rabbit
Result: Mechanical irritation of the eyes is possible.
Assessment: No eye irritation

butyl 2,3-epoxypropyl ether:
Species: Rabbit
Result: Severe eye irritation
Assessment: Severe eye irritation

Respiratory or skin sensitisation**Components:**

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Exposure routes: Skin

Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: Causes sensitisation.

limestone:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

butyl 2,3-epoxypropyl ether:

Result: May cause sensitisation by skin contact.

Assessment: No data available

Germ cell mutagenicity**Components:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Genotoxicity in vivo : Cell type: Germ

Application Route: Oral

Method: OECD Test Guideline 478

Result: negative

Cell type: Somatic

Application Route: Oral

Dose: 0 - 5000 mg/kg

Method: OPPTS 870.5395

Result: negative

Components:

butyl 2,3-epoxypropyl ether:

Germ cell mutagenicity- : In vitro tests showed mutagenic effects

Assessment

Germ cell mutagenicity- : No data available

Assessment

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Carcinogenicity**Components:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

Components:

butyl 2,3-epoxypropyl ether:

Carcinogenicity -

Assessment

IARC

: Suspected human carcinogens

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 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:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Effects on fertility

: Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral

Dose: >750 milligram per kilogram

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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.

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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
 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**Components:**

butyl 2,3-epoxypropyl ether:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Species: Rat, male and female

NOAEL: 50 mg/kg

Application Route: Ingestion

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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

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

Ingestion: No data available

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

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

limestone:

Toxicity to fish : LC50: > 56,000 mg/l
 Exposure time: 96 h

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Toxicity to algae/aquatic plants : 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

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

Toxicity to fish (Chronic toxicity) : No data available

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

limestone:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50 (Daphnia magna (Water flea)): > 350 mg/l
 Exposure time: 125 d
 Test Type: semi-static test
 Test substance: Fresh water

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

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Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Components:

butyl 2,3-epoxypropyl ether:

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

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %
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

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Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

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:**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

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

limestone:
Partition coefficient: n-octanol/water : log Pow: < 1

Mobility in soil

Mobility : No data available

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Distribution among environmental compartments : Koc: 445
Stability in soil : No data available

Other adverse effects

SAFETY DATA SHEET

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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.
Harmful 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.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulations

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IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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**

Not regulated as dangerous goods

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

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylene glycol	107-21-1	5000	*
1-chloro-2,3-epoxypropane	106-89-8	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Germ cell mutagenicity
Carcinogenicity

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 can expose you to chemicals including Ethylene glycol, 4,4'-isopropylidenediphenol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

CH INV : The formulation contains substances listed on the Swiss Inventory

DSL : This product contains one or several components listed in the Canadian NDSL.

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RENCAST® 3253 US

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 Date of first issue: 07/27/2016

- 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.

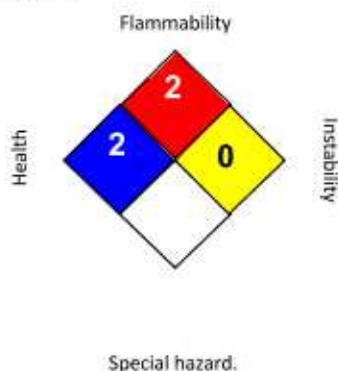
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	*	2
FLAMMABILITY		2
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 : 01/09/2019
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1



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Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
OSHA Z-1 / TWA : 8-hour time weighted average

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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® 3253 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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 2
Skin corrosion : Category 1B
Serious eye damage : Category 1
Skin sensitisation : Category 1
Reproductive toxicity : Category 1B
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)
Short-term (acute) aquatic hazard : Category 1
Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

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H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe 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 must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory 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.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing 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

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Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-iminodi(ethylamine)	111-40-0	30 - 50
2-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	27136-73-8	20 - 25
Diaminopolypropylene glycol (Molecular weight >230 g/mol)	9046-10-0	20 - 25
Phenol, 4-nonyl-, branched	84852-15-3	10 - 20
(Z)-N-(2-aminoethyl)-N-(2-hydroxyethyl)-9-octadecenamide	93-81-2	1 - 2.5
2-(2-aminoethylamino)ethanol	111-41-1	0.1 - 1

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.
 Symptoms of poisoning may appear several hours later.
 Treat symptomatically.
 Get medical attention if symptoms occur.
- If inhaled : Call a physician or poison control centre immediately.
 If inhaled, remove to fresh air.
 Get medical attention if symptoms occur.
- 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.
 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 : None known.

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delayed

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
Nitrogen oxides (NO_x)
- 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.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
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.

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- 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 : Prevent unauthorized access.
 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.
 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.

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,2'-iminodi(ethylamine)	111-40-0	TWA	1 ppm	ACGIH

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.

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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 : amber, Clear

Odour : amine-like

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 : 241 °F / 116 °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 / Upper flammability limit : No data is available on the product itself.

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

Vapour pressure : No data is available on the product itself.

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

Relative density : 0.97

Density : 0.97 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.

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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 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 : None known.

Hazardous decomposition products : No hazardous decomposition products are known.

Hazardous decomposition products : carbon monoxide
carbon dioxide
Nitrogen oxides

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 : 1,140 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 0.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 2,017 mg/kg
Method: Calculation method

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

Skin corrosion/irritation**Components:**

2,2'-iminodi(ethylamine):

Species: Rabbit

Assessment: Causes burns.

Result: Causes burns.

2-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive after 1 to 4 hours of exposure

Diaminopolypropylene glycol (Molecular weight >230 g/mol):

Species: Rabbit

Assessment: Causes burns.

Result: Causes burns.

Phenol, 4-nonyl-, branched:

Species: Rabbit

Assessment: Causes burns.

Result: Causes burns.

2-(2-aminoethylamino)ethanol:

Species: Rabbit Assessment:

Causes burns. Method: OECD Test

Guideline 404

Result: Corrosive after 3 minutes to 1 hour of exposure

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

2,2'-iminodi(ethylamine):

Species: Rabbit Result:

Corrosive Assessment:

Corrosive

Phenol, 4-nonyl-, branched:

Result: Risk of serious damage to eyes.

(Z)-N-(2-aminoethyl)-N-(2-hydroxyethyl)-9-octadecenamide:

Assessment: Risk of serious damage to eyes.

2-(2-aminoethylamino)ethanol:

Species: Rabbit

Result: Irreversible effects on the eye

Assessment: Corrosive

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Respiratory or skin sensitisation**Components:**

2,2'-iminodi(ethylamine):

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Remarks: Causes sensitisation.

Exposure routes: Respiratory Tract

Species: Mouse

Result: Does not cause respiratory sensitisation.

Diaminopolypropylene glycol (Molecular weight >230 g/mol):

Exposure routes: Skin

Species: Guinea pig

Result: Does not cause skin sensitisation.

Phenol, 4-nonyl-, branched:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

2-(2-aminoethylamino)ethanol:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Components:

Phenol, 4-nonyl-, branched:

Assessment: Causes severe skin burns and eye damage.

Germ cell mutagenicity**Components:**

Diaminopolypropylene glycol (Molecular weight >230 g/mol):

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

2-(2-aminoethylamino)ethanol:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negativeMetabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative**Components:**

2,2'-iminodi(ethylamine):

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Genotoxicity in vivo : Cell type: Somatic
 Application Route: Oral
 Dose: 85 - 850 mg/kg
 Method: OECD Test Guideline 474
 Result: negative

Application Route: Oral
 Result: negative

2-(2-aminoethylamino)ethanol:
 Genotoxicity in vivo

: Application Route: Oral
 Dose: 3000 mg/kg
 Result: negative

Application Route: Oral
 Method: OECD Test Guideline 474
 Result: negative

Application Route: Oral
 Exposure time: 7 d
 Method: OECD Test Guideline 477
 Result: negative

Carcinogenicity**Components:**

2,2'-iminodi(ethylamine):
 Species: Mouse, male
 Application Route: Dermal
 Dose: 56.3 mg/kg
 Frequency of Treatment: 3 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 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:**

2,2'-iminodi(ethylamine):
 Effects on fertility

: Species: Rat, male and female

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Application Route: Oral
General Toxicity - Parent: No observed adverse effect level:
30 mg/kg wet weight
Method: OECD Test Guideline 421
Result: positive

2-(2-aminoethylamino)ethanol:

Species: Rat
Application Route: Oral
Dose: 250 milligram per kilogram
Method: OECD Test Guideline 421
Result: positive

Components:

2,2'-iminodi(ethylamine):
Effects on foetal
development

: Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
100 mg/kg body weight
Method: OECD Test Guideline 421
Result: No adverse 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
Result: No teratogenic effects

2-(2-aminoethylamino)ethanol:

Species: Rat, male and female
Application Route: Oral
Dose: 250 milligram per kilogram
General Toxicity Maternal: No observed adverse effect level:
250 mg/kg body weight
Method: OECD Test Guideline 421
Result: Teratogenic effects

Components:

Phenol, 4-nonyl-, branched:
Reproductive toxicity -
Assessment

: Suspected human reproductive toxicant

2-(2-aminoethylamino)ethanol:
Reproductive toxicity -
Assessment

: Clear evidence of adverse effects on sexual function and
fertility, and/or on development, based on animal experiments

STOT - single exposure

Components:

2,2'-iminodi(ethylamine):
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

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STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

2,2'-iminodi(ethylamine):
Species: Rat, male and female
NOEC: 70 - 80 mg/m³
Application Route: Ingestion
Test atmosphere: vapour
Exposure time: 360 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL: 114 mg/kg/d
Application Route: Skin contact
Exposure time: 9,600 h
Number of exposures: 6 d
Method: Chronic toxicity

Diaminopolypropylene glycol (Molecular weight >230 g/mol):
Species: Rat, male and female
NOAEL: 1000 mg/kg/d
Application Route: Skin contact
Exposure time: 672 h
Method: Subacute toxicity

Species: Rat, male and female
NOAEL: 300 mg/kg/d
Application Route: Skin contact
Exposure time: 2,160 h
Method: Subchronic 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

2-(2-aminoethylamino)ethanol:

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Species: Rat, male and female
NOAEL: > 1000 mg/kg/d
Application Route: Skin contact
Exposure time: 672 h
Number of exposures: 5 d
Method: Subacute toxicity

Species: Rat, male and female
NOAEL: 60 mg/kg/d
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 5 d
Method: Subacute 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

Components:

2-(2-aminoethylamino)ethanol:
Remarks: No data available

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

2,2'-iminodi(ethylamine):

Toxicity to fish : LC50: 430 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-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 0.33 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203

Diaminopolypropylene glycol (Molecular weight >230 g/mol):

Toxicity to fish : LC50: > 100 mg/l
 Exposure time: 96 h

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

2-(2-aminoethylamino)ethanol:

Toxicity to fish : LC50: 640 mg/l
 Exposure time: 96 h
 Test substance: Fresh water

Components:

2,2'-iminodi(ethylamine):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 32 mg/l
 Exposure time: 48 h
 Test Type: static test
 Test substance: Fresh water

Diaminopolypropylene glycol (Molecular weight >230 g/mol):

Toxicity to daphnia and other aquatic invertebrates : EC50: 15 mg/l
 Exposure time: 48 h

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Phenol, 4-nonyl-, branched:
 Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.085 mg/l
 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.

2-(2-aminoethylamino)ethanol:
 Toxicity to daphnia and other aquatic invertebrates : EC50: 140 mg/l
 Exposure time: 48 h

Components:

2,2'-iminodi(ethylamine):
 Toxicity to algae : EbC50 (Selenastrum capricornutum (green algae)): 1,164 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

Diaminopolypropylene glycol (Molecular weight >230 g/mol):
 Toxicity to algae : IC50: 135 mg/l
 Exposure time: 72 h

Phenol, 4-nonyl-, branched:
 Toxicity to algae : EbC50 (Desmodesmus subspicatus (green algae)): 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

2-(2-aminoethylamino)ethanol:
 Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 353.6 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water

Components:

2-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol:
 M-Factor (Acute aquatic toxicity) : 1
 Phenol, 4-nonyl-, branched:
 M-Factor (Acute aquatic toxicity) : 10

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Components:

2,2'-iminodi(ethylamine):
Toxicity to fish (Chronic toxicity)

: NOEC: 10 mg/l
Exposure time: 28 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 210

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:

2,2'-iminodi(ethylamine):
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

: NOEC (Daphnia magna (Water flea)): 5.6 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.20

M-Factor (Chronic aquatic toxicity)

: No data available

Components:

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:

2,2'-iminodi(ethylamine):
Toxicity to soil dwelling organisms

: EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 56 d
Method: OECD Test Guideline 222

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

Plant toxicity

: No data available

Sediment toxicity

: No data available

Components:

Phenol, 4-nonyl-, branched:

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Toxicity to terrestrial organisms : EC10: 63.2 mg/kg
 Exposure time: 672 h
 Test substance: Synthetic

Ecotoxicology Assessment

Components:

2,2'-iminodi(ethylamine):
 Acute aquatic toxicity : This product has no known ecotoxicological effects.

Diaminopolypropylene glycol (Molecular weight >230 g/mol):
 Acute aquatic toxicity : Harmful to aquatic life.

Components:

2-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol:
 Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Diaminopolypropylene glycol (Molecular weight >230 g/mol):
 Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

(Z)-N-(2-aminoethyl)-N-(2-hydroxyethyl)-9-octadecenamide:
 Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

2,2'-iminodi(ethylamine):
 Biodegradability : Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: 87 %
 Exposure time: 21 d
 Method: OECD Test Guideline 301D

2-(heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol:
 Biodegradability : Result: Not readily biodegradable.
 Biodegradation: < 20 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301F

Diaminopolypropylene glycol (Molecular weight >230 g/mol):
 Biodegradability : Result: Not biodegradable
 Biodegradation: < 60 %
 Exposure time: 28 d

Phenol, 4-nonyl-, branched:
 Biodegradability : Inoculum: activated sludge
 Concentration: 13 mg/l
 Result: Inherently biodegradable.
 Biodegradation: ca. 48.2 %
 Exposure time: 35 d

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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

2-(2-aminoethylamino)ethanol:
Biodegradability

: Inoculum: activated sludge

Result: Readily biodegradable.

Biodegradation: > 60 %

Exposure time: 28 d

Result: Readily biodegradable.

Method: OECD Test Guideline 301F

Biodegradation: 4 %

Biodegradation: 20 - 70 %

Method: OECD Test Guideline 302B

Biodegradation: > 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Components:

2-(2-aminoethylamino)ethanol:

Biochemical Oxygen Demand (BOD) : 66.3 - 109.6 %

Incubation time: 28 d

Method: OECD Test Guideline 301F

Components:

2-(2-aminoethylamino)ethanol:

Chemical Oxygen Demand (COD) : 1090 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

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Stability in water : No data available

Components:

2,2'-iminodi(ethylamine):
Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Components:

2,2'-iminodi(ethylamine):
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0.3 - 6.3
Exposure time: 42 d
Test substance: Fresh water
Method: flow-through test
Remarks: Bioaccumulation is unlikely.

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.

2-(2-aminoethylamino)ethanol:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 2.1 - 3.7
Remarks: Does not bioaccumulate.

Components:

2,2'-iminodi(ethylamine):
Partition coefficient: n-octanol/water : log Pow: -1.58 (68 °F / 20 °C)
pH: 7

Phenol, 4-nonyl-, branched:
Partition coefficient: n-octanol/water : log Pow: 5.4 (73 °F / 23 °C)
pH: 5.7
Method: OECD Test Guideline 117

2-(2-aminoethylamino)ethanol:
Partition coefficient: n-octanol/water : log Pow: -1.4 (77 °F / 25 °C)

Mobility in soil

Mobility : No data available

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Components:

2,2'-iminodi(ethylamine):
Distribution among environmental compartments : Koc: 19111
Phenol, 4-nonyl-, branched:
Distribution among environmental compartments : Koc: 23000 - 489000
2-(2-aminoethylamino)ethanol:
Distribution among environmental compartments : Koc: 4.2
Koc: 3.524

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.
Very 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.

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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 2735
Proper shipping name : Polyamines, liquid, corrosive, n.o.s.
(DIETHYLENE TRIAMINE, 1-(2-HYDROXYETHYL)-2-HEPTADECENYLIMIDAZOLINE)
Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG

UN number : UN 2735
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(DIETHYLENE TRIAMINE, 1-(2-HYDROXYETHYL)-2-HEPTADECENYLIMIDAZOLINE)
Class : 8
Packing group : II
Labels : 8
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 2735
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(DIETHYLENE TRIAMINE, 1-(2-HYDROXYETHYL)-2-HEPTADECENYLIMIDAZOLINE)
Class : 8
Packing group : II
Labels : CORROSIVE
ERG Code : 153

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Marine pollutant : yes(DIETHYLENE TRIAMINE)

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
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Phenol, 4-nonyl-, branched 84852-15-3 >= 10 - < 20 %

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	: Not 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

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This product is subject under TSCA 5(a) to Significant New Use Restrictions (SNUR).
Phenol, 4-nonyl-, branched 84852-15-3

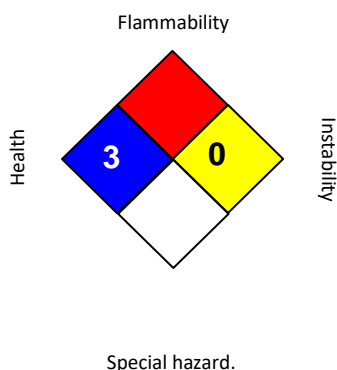
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
Phenol, 4-nonyl-, branched 84852-15-3

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 : 07/16/2018

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average

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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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