



RENGEL® 3260 US

Version Revision Date: SDS Number: Date of last issue: 09/16/2015
1.1 01/04/2019 400001012667 Date of first issue: 09/16/2015

SECTION 1. IDENTIFICATION

Product name : RENGEL® 3260 US

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Manufacturer or supplier's details

Company name of supplier

: Huntsman Advanced Materials Americas LLC

Address

Telephone

P.O. Box 4980 The Woodlands, TX 77387

United States of America (USA) : 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

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 2

Long-term (chronic) aquatic

hazard

: Category 2

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.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : P

: 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.

P391 Collect spillage.

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)
silicon carbide	409-21-2	30 - 50





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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1675-54-3	30 - 50
butyl 2,3-epoxypropyl ether	2426-08-6	2.5 - 5

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 : Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Carbon dioxide (CO2)

Carbon dioxide (CO2)

Unsuitable extinguishing

media

High volume water jet





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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 oxides

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.





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> 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 : 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
silicon carbide	409-21-2	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
butyl 2,3-epoxypropyl ether	2426-08-6	TWA	3 ppm	ACGIH
		TWA	50 ppm 270 mg/m3	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





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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 : blue, opaque

Odour : slight, ether-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 : 171 °F / 77 °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 : 12.75681 hPa (131 °F / 55 °C)

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

Relative density : 1.87 - 2.04





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Density : No data is available on the product itself.

Solubility(ies)

Water solubility : insoluble

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

Partition coefficient: n-

octanol/water

: No data is available on the product itself.

Auto-ignition temperature

: No data is available on the product itself.

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

Self-Accelerating

decomposition temperature

(SADT)

No data is available on the product itself.

Viscosity : No data is available on the product itself.

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

No dangerous reaction known under conditions of normal use. Reactivity

Chemical stability Stable under normal conditions.

Possibility of hazardous

reactions

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 : No data is available on the product itself.

exposure





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Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg

Method: Calculation method

Acute inhalation toxicity -

: Acute toxicity estimate: 38.05 mg/l

Product 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 : No data available

administration)

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

butyl 2,3-epoxypropyl ether:

Species: Rabbit

Result: Severe eye irritation Assessment: Severe eye irritation

Respiratory or skin sensitisation

Components:

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

Exposure routes: Skin





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Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429 Result: Causes 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-

Assessment

: In vitro tests showed mutagenic effects

Germ cell mutagenicity-

Assessment

: No data available

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





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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

: Suspected human carcinogens

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.

OSHANo 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

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:





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

Effects on foetal : Species: Rabbit, female development : 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 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





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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

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





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Components:

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

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 2.7 mg/l

aquatic invertebrates 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 : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l

plants 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 : NOEC (Daphnia magna (Water flea)): 0.3 mg/l

aquatic invertebrates (Chronic toxicity)

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:

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 : No data

organisms

: No data available

Ecotoxicology Assessment

Acute aquatic toxicity : No data available





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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.

Result. Not readily blodegradable.

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

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





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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- : log Pow: 3.242 (77 °F / 25 °C)

octanol/water pH: 7.1

Method: OECD Test Guideline 117

Mobility in soil

Mobility : No data available

Components:

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

Distribution among : Koc: 445

environmental compartments

Stability in soil : No data available

Other adverse effects

Environmental fate and

pathways

: No data available

Results of PBT and vPvB

assessment

: No data available

Endocrine disrupting

potential

: No data available

Adsorbed organic bound

halogens (AOX)

: No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82

Protection of Stratospheric Ozone - CAA Section 602 Class I

Substances

Remarks: This product neither contains, nor was

manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +

B).

Additional ecological

information - Product

: An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

Global warming potential : No data available





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(GWP)

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

IATA

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.

(BISPHENOL A EPOXY RESIN)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo

aircraft)

Packing instruction : 964

(passenger aircraft)

IMDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

: 964

(BISPHENOL A EPOXY RESIN)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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

Not applicable for product as supplied.





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National Regulations

DOT Classification

UN/ID/NA number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(BISPHENOL A EPOXY RESIN)

Class : 9 Packing group : III

Labels : CLASS 9 ERG Code : 171

Marine pollutant : yes(BISPHENOL A EPOXY 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

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
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 : The following components are subject to reporting levels

established by SARA Title III, Section 313:

Barium zinc sulfate sulfide 1345-05-7 >= 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 contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

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

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory





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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.

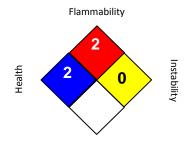
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Special hazard.

HMIS® IV:



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 : 01/04/2019

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1

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® 3260 US

Manufacturer or supplier's details

Company name of supplier

: Huntsman Advanced Materials Americas LLC

Address

Telephone

P.O. Box 4980 The Woodlands,

TX 77387

United States of America (USA): Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS

: Global Product EHS AdMat@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

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

Long-term (chronic) aquatic

hazard

: Category 1

GHS label elements





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Hazard pictograms











Signal word : Danger

Hazard statements : H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H360F May damage fertility.

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.

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 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:

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.





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П

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine	31326-29-1	30 - 50
Diethylenetriamine	111-40-0	30 - 50
4,4'-isopropylidenediphenol	80-05-7	25 - 30

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.





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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.

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 (NOx)

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.





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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 : Prevent u

: 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
Diethylenetriamine	111-40-0	TWA	1 ppm	ACGIH
		TWA	1 ppm 4 mg/m3	NIOSH REL

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an

approved filter.

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





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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.

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 : 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

Odour : ammoniacal

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

pH : No data is available on the product itself.

Freezing point : No data is available on the product itself.

Melting point : No data is available on the product itself.

Boiling point : > 399 °F / > 204 °C

Flash point : $> 250 \, ^{\circ}\text{F} \, / > 121 \, ^{\circ}\text{C}$

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.





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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 : < 3.11922 hPa (158 °F / 70 °C)

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

Relative density : 1.08

Density : No data is available on the product itself.

Solubility(ies)

Water solubility : slightly soluble

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

Partition coefficient: n-

octanol/water

: No data is available on the product itself.

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

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

Self-Accelerating

decomposition temperature

(SADT)

: No data is available on the product itself.

Viscosity : No data is available on the product itself.

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

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

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

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No 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

: carbon monoxide

carbon dioxide

dinitrogen oxide





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SECTION 11. TOXICOLOGICAL INFORMATION

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

exposure

Acute toxicity

Acute oral toxicity - Product : LD50 (Rat, male): 1,150 mg/kg

LD50 (Rat, female): 1,369 mg/kg

LD50 (Rat, male and female): 1,190 mg/kg

Acute inhalation toxicity -

Product

: Acute toxicity estimate: 0.5286 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Acute dermal toxicity -

Product

: Acute toxicity estimate : 2,986 mg/kg

Method: Calculation method

Acute toxicity (other routes of : No data available

administration)

Skin corrosion/irritation

Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine:

Species: Rabbit

Assessment: Causes burns.

Method: OECD Test Guideline 431

Result: Causes burns.

GLP: yes

Diethylenetriamine: Species: Rabbit

Assessment: Causes burns. Result: Causes burns.

4,4'-isopropylidenediphenol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine:





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Result: Severe irritation

Assessment: Causes severe burns. Method: OECD Test Guideline 437

Diethylenetriamine: Species: Rabbit Result: Corrosive Assessment: Corrosive

4,4'-isopropylidenediphenol:

Species: Rabbit

Result: Irreversible effects on the eye Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine: Test Type: Local lymph node assay (LLNA)

Species: Mouse

Assessment: Probability or evidence of high skin sensitisation rate in humans

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

GLP: yes

Diethylenetriamine: 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.

4,4'-isopropylidenediphenol: Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429 Result: Does not cause skin sensitisation.

Exposure routes: Skin Species: Humans

Assessment: May cause sensitisation by skin contact.

Result: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

4,4'-lsopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Genotoxicity in vitro : Test Type: Ames test





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Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative GLP: yes

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative GLP: yes

4,4'-isopropylidenediphenol:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation

Result: negative

Components:

Diethylenetriamine:

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

4,4'-isopropylidenediphenol:

Genotoxicity in vivo : Method: OECD Test Guideline 474

Result: negative

Germ cell mutagenicity-

Assessment

: No data available

Carcinogenicity

Components:

Diethylenetriamine: Species: Mouse, male Application Route: Dermal

Dose: 56.3 mg/kg

Frequency of Treatment: 3 daily

Result: negative

4,4'-isopropylidenediphenol: Species: Rat, male and female Application Route: Oral

Exposure time: 103 weeks
Frequency of Treatment: 7 daily

Result: negative

Carcinogenicity -

Assessment

: No data available

IARC No component of this product present at levels greater than or





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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:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Effects on fertility : Test Type: Combined Repeated Dose Toxicity Study with the

Reproduction / Developmental Toxicity Screening Test

Species: Rat, male and female

Strain: wistar

Application Route: Oral

General Toxicity - Parent: No observed adverse effect level:

60 mg/kg body weight

Fertility: No-observed-effect level: 60 mg/kg body weight

Method: OECD Test Guideline 422

GLP: yes

Diethylenetriamine:

Species: Rat, male and female

Application Route: Oral

General Toxicity - Parent: No observed adverse effect level:

30 mg/kg wet weight

Method: OECD Test Guideline 421

4,4'-isopropylidenediphenol:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 416

Result: Embryotoxic effects and adverse effects on the

offspring were detected.

Components:

Diethylenetriamine:

Effects on foetal : Species: Rat

development 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

4,4'-isopropylidenediphenol:

Species: Rat, female





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Application Route: Oral

General Toxicity Maternal: No observed adverse effect level:

< 160 mg/kg body weight

Method: OECD Test Guideline 416 Result: No teratogenic effects

Components:

4,4'-isopropylidenediphenol:

Reproductive toxicity - : Clear evidence of adverse effects on sexual function and

Assessment fertility, based on animal experiments.

STOT - single exposure

Components:

Diethylenetriamine:

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol:

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine:

Species: Rat, male and female

NOAEL: 60 mg/kg Application Route: Oral

Method: OECD Test Guideline 422

GLP: yes

Diethylenetriamine:

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





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4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female

LOAEL: 600 mg/kg

Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 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:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.16 mg/L

WAF

End point: mortality

Method: OECD Test Guideline 203

GLP: yes

Diethylenetriamine:

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.

4,4'-isopropylidenediphenol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l

Exposure time: 96 h

Components:

4,4'-lsopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine:

Toxicity to daphnia and other

: EC50 (Daphnia magna (Water flea)): 1.7 mg/l

aquatic invertebrates

End point: Immobilization Exposure time: 48 h Test Type: Immobilization

Method: OECD Test Guideline 202

GLP: yes

NOEC: 1 mg/l

Method: OECD Test Guideline 202

Diethylenetriamine:

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
Method: see user defined free text

4,4'-isopropylidenediphenol:

Toxicity to daphnia and other

aquatic invertebrates

EC50: 3.9 - 10.2 mg/l Exposure time: 48 h

(Ceriodaphnia dubia (Water flea)):

Components:





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4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Toxicity to algae/aquatic

plants

: EL50 (Pseudokirchneriella subcapitata (green algae)): > 0.31

ma/l

Exposure time: 72 h Test Type: semi-static test

Method: OECD Test Guideline 201

NOELr (Pseudokirchneriella subcapitata (green algae)): 0.1

Method: OECD Test Guideline 201

GLP: yes

Diethylenetriamine:

Toxicity to algae/aquatic

: 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

4,4'-isopropylidenediphenol:

Toxicity to algae/aquatic

plants

plants

: EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1

mg/l

Exposure time: 96 h

Components:

4.4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

M-Factor (Acute aquatic

toxicity)

Components:

Diethylenetriamine:

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

4,4'-isopropylidenediphenol:

Toxicity to fish (Chronic

toxicity)

: NOEC (Pimephales promelas (fathead minnow)): 0.016 mg/l

Exposure time: 444 d Test Type: flow-through test Test substance: Fresh water

Method: Fish Life Cycle Toxicity Remarks: Toxic to aquatic organisms.

Components:

Diethylenetriamine:

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





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Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

M-Factor (Chronic aquatic : 1

toxicity)

4,4'-isopropylidenediphenol:

M-Factor (Chronic aquatic : 1

toxicity)

Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l

Exposure time: 3 h

Test Type: semi-static test

Method: OECD Test Guideline 209

GLP: yes

Components:

Diethylenetriamine:

Toxicity to soil dwelling : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

organisms Exposure time: 56 d

Method: OECD Test Guideline 222

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial

organisms

: No data available

Ecotoxicology Assessment

Components:

Diethylenetriamine:

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

Components:

4,4'-isopropylidenediphenol:

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:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 0 %





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Exposure time: 28 d

Method: OECD Test Guideline 301B

Diethylenetriamine:

Biodegradability : Inoculum: activated sludge

Result: Readily biodegradable.

Biodegradation: 87 % Exposure time: 21 d

Method: OECD Test Guideline 301D

4,4'-isopropylidenediphenol:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 1 - 2 % Exposure time: 28 d

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

Stability in water : No data available

Components:

Diethylenetriamine:

Photodegradation : Test Type: Air

Rate constant: 500000

Degradation (direct photolysis): 50 %

Impact on Sewage

Treatment

: No data available

Bioaccumulative potential

Components:

Diethylenetriamine:

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.





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Components:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with diethylenetriamine:

Partition coefficient: n- : log Pow: 0.704 (73.4 °F / 23.0 °C) octanol/water : Method: OECD Test Guideline 117

GLP: yes

Diethylenetriamine:

Partition coefficient: n- : log Pow: -1.58 (68 °F / 20 °C)

octanol/water pH: 7

Mobility in soil

Mobility : No data available

Components:

Diethylenetriamine:

Distribution among : Koc: 19111

environmental compartments

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





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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water

courses or the soil.

Do not contaminate ponds, waterways or ditches with

chemical or used container.

Send to a licensed waste management company.

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 2735

Proper shipping name Polyamines, liquid, corrosive, n.o.s.

(DETA-BADGE polymer, DIETHYLENETRIAMINE)

Class Ш Packing group

Labels Class 8 - Corrosive substances

Packing instruction (cargo

aircraft)

855

Packing instruction

(passenger aircraft)

: 851

IMDG

UN number UN 2735

Proper shipping name POLYAMINES, LIQUID, CORROSIVE, N.O.S.

(DETA-BADGE polymer, DIETHYLENETRIAMINE)

Class 8 - II Packing group Labels 8 : F-A, S-B EmS Code 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





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UN/ID/NA number : UN 2735

Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.

(DETA-BADGE polymer, DIETHYLENETRIAMINE)

Class : 8 Packing group : II

Labels : Class 8 - Corrosive substances

ERG Code : 153

Marine pollutant : yes(DETA-BADGE polymer)

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:

isopropylidenediphenol

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 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 : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory





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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.

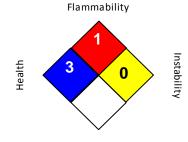
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Special hazard

HMIS® IV:



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

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ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek





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