



CG 1305 RESIN US

Version Revision Date: SDS Number: Date of last issue: 06/02/2017 1.1 07/27/2018 400001010253 Date of first issue: 06/02/2017

SECTION 1. IDENTIFICATION

Product name : CG 1305 RESIN US

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Manufacturer or supplier's details

Company name of supplier

er : Huntsman Advanced Materials Americas LLC

Address

2795 Slough Avenue Mississauga, ON L4T 1G2,

Canada

Telephone

: +1 905 678 9150

E-mail address of person responsible for the SDS

: MSDS@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Epoxy constituents

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitisation : Category 1

Short-term (acute) aquatic

hazard

: Category 3

Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms





Signal word : Warning

Hazard statements : H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

H402 Harmful to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

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





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P264 Wash skin thoroughly after handling.

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

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

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

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

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

attention.

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

attention.

P362 + P364 Take off contaminated clothing and wash it before

reuse.

P391 Collect spillage.

Storage: Not available Disposal:

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

regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-[(1-methylethylidene)bis(4,1-	1675-54-3	40 - 50
phenyleneoxymethylene)]bisoxirane		
aluminium hydroxide	21645-51-2	10 - 20
Oxirane, mono[(C12-14-alkyloxy)methyl]	68609-97-2	5 - 10
derivs.		
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	3101-60-8	2.5 - 5

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 Epichlorhydrin

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.





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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 : Keep respiratory tract clear.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.

Most important symptoms and effects, both acute and

delayed

: None known.

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 oxides

Halogenated compounds

Metal oxides

Specific extinguishing

methods

: No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This

must not be discharged into drains.

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.

Refer to protective measures listed in sections 7 and 8.





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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

fire and explosion

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

Advice on safe handling : Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the

application area.

Dispose of rinse water in accordance with local and national

regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

used.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept

upright to prevent leakage.

Keep in properly labelled containers.

Materials to avoid : Strong acids

Strong bases

Strong oxidizing agents

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
aluminium hydroxide	21645-51-2	TWA (Respirable fraction)	1 mg/m3 (Aluminium)	ACGIH
		TWA (Respirable fraction)	1 mg/m3 (Aluminium)	ACGIH





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Personal protective equipment

Respiratory protection : Ensure adequate ventilation.

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Material : Solvent-resistant gloves (butyl-rubber)

Material : Nitrile rubber Break through time : 10 - 480 min

Material : Neoprene gloves

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 : white

Odour : slight

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

pH : No data is available on the product itself.

Melting point/freezing point : No data available

Boiling point : $> 200 \, ^{\circ}\text{C}$

Flash point : > 150 °C

Method: Pensky-Martens closed cup

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

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

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

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





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flammability limit

Lower explosion limit / Lower

flammability limit

: No data is available on the product itself.

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

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

Relative density : 0.78 - 0.85

Density : 0.83 g/cm3 (20 °C)

Solubility(ies)

Water solubility : practically insoluble (20 °C)

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

Partition coefficient: n-

octanol/water

: No data is available on the product itself.

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

Decomposition temperature : > 200 °C

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.

Molecular weight : No data available

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

reactions

No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition : Carbon oxides

products Burning produces noxious and toxic fumes.





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Hazardous decomposition

products

carbon dioxide

carbon monoxide

Halogenated compounds

aluminium oxide

SECTION 11. TOXICOLOGICAL INFORMATION

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

exposure

Acute toxicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Acute oral : LD50 (Rat, female): > 2,000 mg/kg
toxicityComponents Method: OECD Test Guideline 420

Assessment: The substance or mixture has no acute oral

toxicity

aluminium hydroxide:

Acute oral : LD50 (Rat, female): > 2,000 mg/kg toxicityComponents Method: OECD Test Guideline 423

Assessment: The substance or mixture has no acute oral

toxicity

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

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

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

Acute oral : LD50 (Rat, female): > 2,000 mg/kg toxicityComponents Method: OECD Test Guideline 425

Assessment: The substance or mixture has no acute oral

toxicity

Components:

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Acute inhalation toxicity : LC0 (Rat): > 0.15 mg/l

Exposure time: 7 h
Test atmosphere: vapour
Method: Other guidelines

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

Product Method: Calculation method





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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.

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Species: Rabbit Exposure time: 24 h

Method: Acute Dermal Toxicity

Result: Irritating to skin.

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

Species: Rat

Assessment: No skin irritation Method: OECD Test Guideline 402

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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Species: Rabbit Result: slight irritation

Assessment: No eye irritation Method: OECD Test Guideline 405

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

Species: Rabbit
Result: No eye irritation
Assessment: No eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

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

Exposure routes: Skin Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429 Result: Causes sensitisation.





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Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Test Type: Buehler Test Exposure routes: Skin Species: Guinea pig Method: OPPTS 870.2600

Result: May cause sensitisation by skin contact.

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

Exposure routes: Skin Species: Mouse

Method: OECD Test Guideline 429

Result: The product is a skin sensitiser, sub-category 1A.

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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Concentration: 0,5 - 5.000 µg/mL

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

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

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Concentration: 50 ug/plate Metabolic activation: negative Method: OECD Test Guideline 473

Result: positive

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive





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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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Genotoxicity in vivo : Test Type: In vivo micronucleus test

Species: Mouse (male and female)

Cell type: Bone marrow

Application Route: Intraperitoneal injection Exposure time: 24 hr, 48 hr, and 72 hr Method: OECD Test Guideline 474

Result: negative

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

Carcinogenicity - : No data available

Assessment

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





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equal to 0.1% is identified as a carcinogen or potential

carcinogen by ACGIH.

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.

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Species: Rat, male and female Application Route: Dermal

Duration of Single Treatment: 13 Weeks Frequency of Treatment: 5 days/week

General Toxicity - Parent: No observed adverse effect level:

100 mg/kg body weight

Method: OECD Test Guideline 411

Components:

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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Species: Rat, female Application Route: Dermal





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Duration of Single Treatment: 6 h

General Toxicity Maternal: No observed adverse effect level:

200 mg/kg body weight

Developmental Toxicity: No observed adverse effect level:

200 mg/kg body weight

Method: OECD Test Guideline 414 Result: No teratogenic effects

Reproductive toxicity -

Assessment

: No data available

STOT - single exposure

No data available

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

Species: Mouse, male NOAEL: 100 mg/kg

Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 3 d Method: Subchronic toxicity

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Species: Rat, male and female

NOEL: 1 mg/kg LOAEL: 10 mg/kg

Application Route: Skin contact Exposure time: 13 Weeks

Number of exposures: 5 days/week for 13 weeks

Method: OECD Test Guideline 411

Repeated dose toxicity - : No data available





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Assessment

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

Other health hazards

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

aluminium hydroxide:

Toxicity to fish : LC50: > 10,000 mg/l

Exposure time: 96 h

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:





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Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h
Test Type: semi-static test

Method: OECD Test Guideline 203

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

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

Exposure time: 96 h
Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 203

Components:

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

aluminium hydroxide:

Toxicity to daphnia and other : EC50: > 10,000 mg/l aquatic invertebrates : Exposure time: 48 h

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Toxicity to daphnia and other : EL50 (Daphnia magna (Water flea)): 7.2 mg/l

aquatic invertebrates Exposure time: 48 h

Test Type: static test

Method: OECD Test Guideline 202

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

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): ca. 67.9 mg/l

aquatic invertebrates Exposure time: 48 h

Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Components:

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

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l

Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Toxicity to algae : IC50 (Selenastrum capricornutum (green algae)): 843.75 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201

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

Toxicity to algae : EbC50 (Selenastrum capricornutum (green algae)): ca. 9 mg/l

Exposure time: 72 h
Test Type: static test

Test substance: Fresh water





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Method: OECD Test Guideline 201

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:

aquatic invertebrates (Chronic toxicity)

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.3 mg/l Exposure time: 21 d

> Test Type: semi-static test Test substance: Fresh water

Method: OECD Test Guideline 211

M-Factor (Chronic aquatic

toxicity)

: No data available

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: : IC50 (activated sludge): > 100 mg/l Toxicity to microorganisms

Exposure time: 3 h Test Type: static test

Test substance: Fresh water

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l

Exposure time: 3 h Test Type: static test

Method: OECD Test Guideline 209

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

Toxicity to microorganisms : EC50: > 1,000 mg/l

> Exposure time: 3 h Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 209

Toxicity to soil dwelling

organisms

: No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial

organisms

: No data available

Ecotoxicology Assessment

Acute aquatic toxicity -

: Harmful to aquatic life.

Product

Chronic aquatic toxicity -

Toxic to aquatic life with long lasting effects.

Product

Toxicity Data on Soil : No data available





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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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge Concentration: 100 mg/l Result: Readily biodegradable.

Biodegradation: 87 % Exposure time: 28 d

Method: OECD Test Guideline 301F

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

Biodegradability : Test Type: aerobic

Inoculum: activated sludge Concentration: 5 mg/l

Result: Not readily biodegradable. Biodegradation: ca. 1.1 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

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 : No data available

removability

Components:

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

Stability in water : Degradation half life(DT50): 4.83 d (25 °C) pH: 4





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Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life(DT50): 7.1 d (25 °C) pH: 9

Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life(DT50): 3.58 d (25 °C) pH: 7

Method: OECD Test Guideline 111

Remarks: Fresh water

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

Stability in water : Degradation half life(DT50): ca. 17 d (25 °C) pH: 7

Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life(DT50): ca. 7.98 d (25 °C) pH: 4

Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life(DT50): ca. 10.8 d (25 °C) pH: 9

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- : log Pow: 3.242 (25 °C)

octanol/water pH: 7.1

Method: OECD Test Guideline 117

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Partition coefficient: n- : log Pow: 3.77 (20 °C)

octanol/water Method: OECD Test Guideline 107

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

Partition coefficient: n- : log Pow: 3.59 (20 °C)

octanol/water pH: 7

Method: OECD Test Guideline 107

Mobility in soil

Mobility : No data available





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Components:

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

Distribution among : Koc: 445

environmental compartments

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

Distribution among : OECD Test Guideline 121 environmental compartments Koc: ca. 755, log Koc: ca. 2.88

Method: OECD Test Guideline 121

Stability in soil : No data available

Other adverse effects

Environmental fate and

pathways

: No data available

Results of PBT and vPvB

assessment

: No data available

Endocrine disrupting

potential

: No data available

Adsorbed organic bound

halogens (AOX)

: No data available

Hazardous to the ozone layer

Ozone-Depletion Potential

Not applicable

Additional ecological

information - Product

: An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Harmful to aquatic life.

Toxic to aquatic life with long lasting effects.

Global warming potential

(GWP)

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

courses or the soil.

Do not contaminate ponds, waterways or ditches with

chemical or used container.

Send to a licensed waste management company.

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.





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SECTION 14. TRANSPORT INFORMATION

International Regulations

TDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(BISPHENOL A EPOXY RESIN)

Class : 9
Packing group : III
Labels : 9

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.

National Regulations

TDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(BISPHENOL A EPOXY RESIN)

Class : 9
Packing group : III
Labels : 9
ERG Code : 171





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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

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

CH INV : The formulation contains substances listed on the Swiss

Inventory, Low volume exemption, Not in compliance with the

inventory

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

Canadian NDSL.

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

KECI : Not in compliance with the inventory PICCS : Not in compliance with the inventory

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

TCSI : Not in compliance with the inventory

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

Inventories

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

Canada. CEPA 1999 Significant New Activity (SNAc) List

No substances are subject to a Significant New Activity Notification.





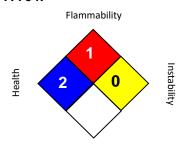
CG 1305 RESIN US

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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 : 07/27/2018

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

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

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

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

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

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

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SECTION 1. IDENTIFICATION

Product name : CG 1305 HARDENER US

Manufacturer or supplier's details

Company name of supplier

: Huntsman Advanced Materials Americas LLC

Address

2795 Slough Avenue Mississauga, ON L4T 1G2,

Canada

Telephone : +1 905 678 9150

E-mail address of person responsible for the SDS

: 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 : Hardener

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Skin corrosion : Category 1C

Serious eye damage : Category 1

Skin sensitisation : Category 1

Long-term (chronic) aquatic

hazard

: Category 3

GHS label elements

Hazard pictograms





Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

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

P264 Wash skin thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.





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

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT

induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately

all contaminated clothing. Rinse skin with water.

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

CENTER/doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON

CENTER/doctor.

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

attention.

P362 + P364 Take off contaminated clothing and wash it before

reuse.
Storage:

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)
Triethylenetetramine, propoxylated	26950-63-0	30 - 60
Triethylenetetramine	112-24-3	10 - 25
Amines, polyethylenepoly-,	112-57-2	1 - 2.5
tetraethylenepentamine fraction		

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.

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 : Immediate medical treatment is necessary as untreated





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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

delayed

None known.

Notes to physician

: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Unsuitable extinguishing

media

High volume water jet

Specific hazards during

. firefighting Do not allow run-off from fire fighting to enter drains or water

courses.

Hazardous combustion

products

Carbon dioxide (CO2)

Carbon monoxide

Ammonia

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.





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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 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

fire and explosion

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

Advice on safe handling Do not breathe vapours or spray mist.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the

application area.

To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national

regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eves. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the

application area.

To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national

regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

used.

Keep container tightly closed in a dry and well-ventilated place. Conditions for safe storage

Containers which are opened must be carefully resealed and kept

upright to prevent leakage. Observe label precautions.

Keep in properly labelled containers.





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

SDS

Recommended storage

temperature

Further information on

storage stability

: 2 - 40 °C

Stable under normal conditions.

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
Triethylenetetramine	112-24-3	TWA	0.5 ppm 3 mg/m3	CA ON OEL

Personal protective equipment

Respiratory protection : Ensure adequate ventilation.

Respiratory protection : Use respiratory protection unless adequate local exhaust

ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines

Filter type : Combined particulates and ammonia/amines type

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Material : Solvent-resistant gloves (butyl-rubber)

Material : Nitrile rubber Break through time : 10 - 480 min

Remarks : The suitability for a specific workplace should be discussed

with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water

Tightly fitting safety goggles

Wear face-shield and protective suit for abnormal processing

problems.

Skin and body protection : Impervious clothing

Choose body protection according to the amount and

concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.

When using do not smoke.

Wash hands before breaks and at the end of workday.





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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour amber

Odour amine-like

Odour Threshold No data is available on the product itself.

pΗ No data is available on the product itself.

Melting point/freezing point : No data available

 $: > 200 \, ^{\circ}\text{C}$ **Boiling point**

Flash point : > 118 °C

Method: Pensky-Martens closed cup

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

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

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

Upper explosion limit / Upper

flammability limit

: No data is available on the product itself.

Lower explosion limit / Lower

flammability limit

: No data is available on the product itself.

: < 1 hPa (20 °C) Vapour pressure

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

Relative density 0.95 - 1

: No data is available on the product itself. Density

Solubility(ies)

Water solubility : partly soluble (20 °C)

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

Partition coefficient: n-

Auto-ignition temperature

octanol/water

No data is available on the product itself.

Decomposition temperature $: > 200 \, ^{\circ}\text{C}$

Self-Accelerating decomposition temperature

(SADT)

No data is available on the product itself.

: No data is available on the product itself.





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Viscosity

Viscosity, dynamic : 400 mPa.s (20 °C)

Explosive properties No data is available on the product itself.

Oxidizing properties No data is available on the product itself.

Molecular weight No data available

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

SECTION 10. STABILITY AND REACTIVITY

Reactivity No dangerous reaction known under conditions of normal use.

: No hazards to be specially mentioned.

No hazardous decomposition products are known.

Chemical stability Stable under normal conditions.

Possibility of hazardous

reactions

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition

products

Hazardous decomposition

products

carbon dioxide

carbon monoxide

Nitrogen oxides

ammonia, anhydrous

Aldehydes

Ketones

SECTION 11. TOXICOLOGICAL INFORMATION

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

exposure

Acute toxicity

Acute oral toxicity - Product Assessment: The substance or mixture has no acute oral

toxicity

Acute inhalation toxicity : No data available

Acute dermal toxicity -

: Acute toxicity estimate : 3,090 mg/kg

Method: Calculation method Product





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Acute toxicity (other routes of : No data available

administration)

Skin corrosion/irritation

Product:

Result: Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Components:

Triethylenetetramine, propoxylated:

Result: Eye irritation

Triethylenetetramine: Species: Rabbit Result: Corrosive Assessment: Corrosive

Method: OECD Test Guideline 405

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Species: Rabbit

Result: Risk of serious damage to eyes. Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

Triethylenetetramine, propoxylated:

Exposure routes: Skin

Method: OECD Test Guideline 429

Result: Probability or evidence of low to moderate skin sensitisation rate in humans

Triethylenetetramine: Exposure routes: Skin Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Skin Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Exposure routes: Skin Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

No data available Assessment:

Germ cell mutagenicity

Components:





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Triethylenetetramine, propoxylated:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium Method: OECD Test Guideline 471

Result: positive

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

Result: negative

Triethylenetetramine:

Genotoxicity in vitro : Concentration: 0 - 200 µg/L

Metabolic activation: negative Method: OECD Test Guideline 482

Result: negative

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

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

Method: OECD Test Guideline 479

Result: positive

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Metabolic activation: negative Method: OECD Test Guideline 482

Result: negative

Components:

Triethylenetetramine:

Genotoxicity in vivo : Application Route: Intraperitoneal injection

Dose: 0 - 600 mg/kg

Method: OECD Test Guideline 474

Result: negative

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Genotoxicity in vivo : Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

Components:

Triethylenetetramine, propoxylated:

Germ cell mutagenicity-

: Tests on bacterial or mammalian cell cultures did not show

mutagenic effects.

Germ cell mutagenicity-

Assessment

Assessment

: No data available





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Carcinogenicity

Components:

Triethylenetetramine: Species: Mouse, male Application Route: Dermal

Dose: 42 mg/kg

Frequency of Treatment: 3 days/week Method: OECD Test Guideline 451

Result: negative

Species: Mouse, male Application Route: Dermal Exposure time: 104 weeks

Dose: 16.8 mg/kg

Frequency of Treatment: 3 days/week Method: OECD Test Guideline 451

Carcinogenicity -

: No data available

Assessment

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

equal to 0.1% is identified as a carcinogen or potential

carcinogen by ACGIH.

Reproductive toxicity

Components:

Triethylenetetramine, propoxylated:

Effects on fertility : Test Type: Fertility

Species: Rat, male and female

Strain: wistar

Application Route: Ingestion

Dose: 100, 300 and 750 milligram per kilogram

General Toxicity - Parent: No-observed-effect level: Measured

750 mg/kg body weight

General Toxicity F1: No-observed-effect level: Measured 750

mg/kg body weight

Method: OECD Test Guideline 422

Components:

Triethylenetetramine, propoxylated:

Effects on foetal : Species: Rat, male and female

development Strain: wistar

Application Route: Ingestion

Dose: 100, 300 and 750 milligram per kilogram General Toxicity Maternal: No-observed-effect level:

Measured 300 mg/kg body weight

Developmental Toxicity: No observed adverse effect level:

Measured 750 mg/kg body weight Method: OECD Test Guideline 422

Triethylenetetramine:





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Species: Rat

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level:

> 750 mg/kg body weight

Method: OECD Test Guideline 414 Result: No teratogenic effects

Species: Rabbit

Application Route: Dermal

General Toxicity Maternal: No observed adverse effect level:

125 mg/kg body weight

Method: OECD Test Guideline 414 Result: No teratogenic effects

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Species: Rabbit, female Application Route: Dermal

General Toxicity Maternal: No-observed-effect level: 50 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:

750 mg/kg body weight

Method: OECD Test Guideline 414 Result: No teratogenic effects

Components:

Triethylenetetramine, propoxylated:

Reproductive toxicity - : No evidence of adverse effects on sexual function and fertility,

Assessment or on development, based on animal experiments.

STOT - single exposure

No data available

STOT - repeated exposure

Components:

Triethylenetetramine, propoxylated:

Exposure routes: Ingestion Target Organs: Kidney

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

Repeated dose toxicity

Components:

Triethylenetetramine, propoxylated: Species: Rat, male and female

NOAEL: 300 mg/kg

Application Route: Ingestion Exposure time: 43 - 44 Days Method: OECD Test Guideline 422





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Triethylenetetramine:

Species: Rat, male and female

NOAEL: 50 mg/kg/d

Application Route: Ingestion Exposure time: 26 Weeks Number of exposures: 7 d Method: Subchronic toxicity

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Species: Rat, male and female

NOAEL: 50 mg/kg/d

Application Route: Ingestion Exposure time: 4,368 h Method: Subchronic toxicity

Species: Rabbit, male and female

NOAEL: 50 mg/kg/d

Application Route: Skin contact

Exposure time: 744 h Number of exposures: 5 d Method: Subacute toxicity

Repeated dose toxicity -

Assessment

: No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information





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Ingestion: No data available

Other health hazards

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Triethylenetetramine, propoxylated:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): Measured > 4.1

Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes

Method: OECD Test Guideline 203

Triethylenetetramine:

: LC50 (Pimephales promelas (fathead minnow)): 330 mg/l Toxicity to fish

> Exposure time: 96 h Test Type: static test

Test substance: Fresh water Method: Fish Acute Toxicity Test

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 420 mg/l

> Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water

Method: Directive 67/548/EEC, Annex V, C.1.

Components:

Triethylenetetramine, propoxylated:

aquatic invertebrates

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

Exposure time: 48 h Test Type: static test Analytical monitoring: yes

Method: OECD Test Guideline 202

Triethylenetetramine:

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 31.1 mg/l

Exposure time: 48 h Test Type: static test Test substance: Fresh water

Method: Directive 67/548/EEC, Annex V, C.2.

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 24.1 mg/l

Exposure time: 48 h Test Type: static test





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Test substance: Fresh water

Method: Tested according to Annex V of Directive

67/548/EEC.

Components:

Triethylenetetramine, propoxylated:

Toxicity to algae/aguatic : EC50 (Pseudokirchneriella subcapitata (algae)): Measured 4.1

plants m

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes

Method: OECD Test Guideline 201

ErC10 (Pseudokirchneriella subcapitata (algae)): Measured

0.11 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes

Method: OECD Test Guideline 201

Triethylenetetramine:

Toxicity to algae/aquatic

plants

: ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l

Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water

Method: OECD Test Guideline 201

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Toxicity to algae/aquatic

plants

: ErC50 (Selenastrum capricornutum (green algae)): 6.8 mg/l

Exposure time: 72 h Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 201

M-Factor (Acute aquatic

toxicity)

: No data available

Toxicity to fish (Chronic

toxicity)

: No data available

Components:

Triethylenetetramine:

Toxicity to daphnia and other

aquatic invertebrates (Chronic toxicity)

: EC10 (Daphnia magna (Water flea)): 1.9 mg/l

Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic

toxicity)

: No data available

Components:

Triethylenetetramine, propoxylated:

Toxicity to microorganisms : EC10 (activated sludge): 38 mg/l





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Exposure time: 3 h Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 209

Triethylenetetramine:

Toxicity to microorganisms : EC50 (activated sludge): 800 mg/l

Exposure time: 0.5 h Test Type: static test

Test substance: Fresh water

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Toxicity to microorganisms : EC50: 97.3 mg/l

Exposure time: 2 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 -

Product

This product has no known ecotoxicological effects.Harmful to aquatic life with long lasting effects.

Chronic aquatic toxicity -

Product Toxicity Data on Soil

: No data available

Other organisms relevant to

the environment

: No data available

Persistence and degradability

Components:

Triethylenetetramine, propoxylated:

Biodegradability : Inoculum: Domestic sewage

Concentration: 100 mg/l

Result: Not readily biodegradable.

Biodegradation: 4 % Exposure time: 28 d

Method: OECD Test Guideline 301F

Triethylenetetramine:

Biodegradability : Inoculum: activated sludge

Result: Not readily biodegradable.

Biodegradation: 0 % Exposure time: 162 d

Method: OECD Test Guideline 301D

Inoculum: activated sludge





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Result: Not readily biodegradable.

Biodegradation: 20 % Exposure time: 84 d

Method: Inherent Biodegradability: Modified SCAS Test

Amines, polyethylenepoly-, tetraethylenepentamine fraction: Biodegradability : Inoculum: activated sludge

Result: Not biodegradable Biodegradation: 17 % Exposure time: 84 d

Method: Inherent Biodegradability: Modified SCAS Test

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:

Triethylenetetramine, propoxylated:

Stability in water : Degradation half life(DT50): > 1 yr (25 °C) pH: 4

Method: OECD Test Guideline 111

Degradation half life(DT50): > 1 yr (25 °C) pH: 7

Method: OECD Test Guideline 111

Degradation half life(DT50): > 1 yr (25 °C) pH: 9

Method: OECD Test Guideline 111

Photodegradation : No data available

Impact on Sewage

Treatment

: No data available

Bioaccumulative potential

Bioaccumulation : No data available

Components:

Triethylenetetramine, propoxylated:

Partition coefficient: n-

: log Pow: -2.42

octanol/water





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Triethylenetetramine:

Partition coefficient: n-: log Pow: -2.65 (20 °C)

octanol/water Method: OECD Test Guideline 117

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Partition coefficient: n-

octanol/water

: log Pow: -3.16

Mobility in soil

Mobility : No data available

Components:

Triethylenetetramine:

: Koc: 1584.9 - 5012 Distribution among

environmental compartments Method: OECD Test Guideline 106

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Distribution among : Koc: 3.2 - 3.7

environmental compartments Method: OECD Test Guideline 106

Stability in soil : No data available

Other adverse effects

Environmental fate and

pathways

: No data available

Components:

Triethylenetetramine, propoxylated:

Results of PBT and vPvB

: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

assessment

Endocrine disrupting potential

: No data available

Adsorbed organic bound

halogens (AOX)

: No data available

Hazardous to the ozone layer

Ozone-Depletion Potential Not applicable

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





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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

TDG

UN number : UN 2735

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

(TRIETHYLENE TETRAMINE, TETRAETHYLENE

PENTAMINE)

Class : 8 : III Packing group Labels : 8

IATA

UN/ID No. : UN 2735

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

856

(TRIETHYLENE TETRAMINE, TETRAETHYLENE

PENTAMINE)

Class 8 : III Packing group

Labels Corrosive

Packing instruction (cargo

aircraft)

Packing instruction : 852

(passenger aircraft)

IMDG

UN number UN 2735

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

(TRIETHYLENE TETRAMINE, TETRAETHYLENE

PENTAMINE)

Class : 8





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

Marine pollutant : no

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

Not applicable for product as supplied.

National Regulations

TDG

UN number : UN 2735

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

(TRIETHYLENE TETRAMINE, TETRAETHYLENE

PENTAMINE)

Class : 8
Packing group : III
Labels : 8
ERG Code : 153
Marine pollutant : no

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

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

CH INV : The formulation contains substances listed on the Swiss

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

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

PICCS : Not in compliance with the inventory

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

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

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

Inventories





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

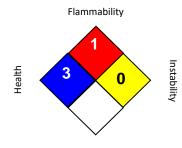
Canada. CEPA 1999 Significant New Activity (SNAc) List

No substances are subject to a Significant New Activity Notification.

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 : 04/05/2019

CA ON OEL : Ontario Table of Occupational Exposure Limits made under

the Occupational Health and Safety Act.

CA ON OEL / TWA : Time-Weighted Average Limit (TWA)

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

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

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

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





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