EPOCAST® 1619 A US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	02.03.2016	400001008109	Date of first issue: 02.03.2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EPOCAST® 1619 A US

Manufacturer or supplier's details

Company : Huntsman Advanced Materials (Australia) Pty Ltd
Address : ACN:09162879
Gate 3, 765 Ballarat Road
Deer Park,
Victoria 3023
Australia
Telephone : +613 9933 6691 (CS: HAM), 1300 366 819 (Toll-free - AU), 0800 441 216 (Toll-free - NZ)

E-mail address : Global_Product_EHS_AdMat@huntsman.com

Emergency telephone : Australia: 1800 786 152 (ALL HOURS)
International: +65 6336 6011 (ALL HOURS)

Recommended use of the chemical and restrictions on use

Recommended use : Epoxy constituents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.

H411 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.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
P273 Avoid release to the environment.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
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 or doctor/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Bisphenol A epoxy resin	25068-38-6	>= 30 - < 60
Dibromo cresyl glycidyl ether	75150-13-9	< 10
Butanedioldiglycidyl ether	2425-79-8	< 10
diantimony trioxide	1309-64-4	< 10
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	3101-60-8	< 10
o-cresyl glycidyl ether	2210-79-9	< 10

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

If inhaled	:	If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Induce vomiting immediately and call a physician. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	None known.
Notes to physician	:	Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	No data is available on the product itself.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No data is available on the product itself.
Specific extinguishing methods	:	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 fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapors/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 sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	:	Strong acids Strong bases Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	effective ventilation in all processing areas

Personal protective equipment

Respiratory protection	:	In the case of vapor formation use a respirator with an approved filter. Refer to Australian/New Zealand Standard AS/NZS 1715 and AS/NZS 1716 for guidance on selection and use of respiratory devices.
Hand protection		
Material	:	butyl-rubber Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time	:	> 8 h Neoprene Nitrile rubber 10 - 480 min
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Refer to Australian/New Zealand Standard AS/NZS 2161.1: 2000 for guidance on selection and use of protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems. Refer to Australian/New Zealand Standard AS/NZS 1337:1992 for guidance on selection and use of protective eyeware.
Skin and body protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Color	:	off-white
Odor	:	slight
Odor 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/boiling range	:	No data available
Flash point	:	> 200 °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.
Upper explosion limit	:	No data is available on the product itself.
Lower explosion limit	:	No data is available on the product itself.
Vapor pressure	:	< 1 hPa (20 °C)
Relative vapor density	:	No data is available on the product itself.
Relative density	:	0.7
Density	:	0.6 g/cm3 (25 °C)
Solubility(ies)		
Water solubility	:	partly soluble (20 °C)
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Autoignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available
Incompatible materials	:	Strong acids and strong bases Strong oxidizing agents
Hazardous decomposition products	:	Carbon oxides Burning produces obnoxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 2,000 mg/kg
Method: Calculation method

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

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitization

Product:

Remarks: Causes sensitization.

Assessment: No data available

Chronic toxicity

Germ cell mutagenicity

Ingredients:

Bisphenol A epoxy resin**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Concentration: 0 - 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Butanedioldiglycidyl ether**:**
Genotoxicity in vitro : Concentration: 10 - 5000 ug/plate
Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471
Result: positive

Concentration: 1 - 100 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether**:**
Genotoxicity in vitro : Concentration: 50 ug/plate
Metabolic activation: negative
Method: OECD Test Guideline 473
Result: positive

Concentration: 33 ug/plate
Metabolic activation: negative
Method: OECD Test Guideline 471
Result: positive

o-cresyl glycidyl ether**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Ingredients:

Bisphenol A epoxy resin**:**
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

Butanedioldiglycidyl ether**:**
Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Somatic
Application Route: Oral
Exposure time: 4 d
Dose: 187.5 - 750 mg/kg
Method: OECD Test Guideline 474
Result: negative

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

o-cresyl glycidyl ether**:**

Genotoxicity in vivo : Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Application Route: Dermal
Exposure time: 5 d
Dose: 500 mg/kg
Result: negative

Application Route: Dermal
Exposure time: 8 Weeks
Dose: 1.5 mg/kg
Method: OECD Test Guideline 478
Result: positive

Ingredients:

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

Butanedioldiglycidyl ether**:**
Germ cell mutagenicity-Assessment : Weight of evidence does not support classification as a germ cell mutagen.

o-cresyl glycidyl ether**:**
Germ cell mutagenicity-Assessment : Positive results from in vitro mammalian mutagenicity assays, chemical structure activity relationship to known germ cell mutagens

Germ cell mutagenicity-Assessment : No data available

Carcinogenicity

Ingredients:

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

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

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

diantimony trioxide**:**
Species: Rat, (female)
Application Route: Inhalation
Exposure time: 12 month(s)
Dose: 45 mg/m³
Frequency of Treatment: 7 hour
Method: OECD Test Guideline 451
Result: positive
Target Organs: Lungs

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Ingredients:

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

diantimony trioxide**:**
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 408
Result: No effects on fertility and early embryonic development were detected.

Ingredients:

Bisphenol A epoxy resin**:**
Effects on fetal development : Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: NOAEL (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: NOAEL (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: NOAEL (No observed adverse effect level): 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

diantimony trioxide**:**

Species: Rat, female
Application Route: Inhalation
General Toxicity Maternal: LOAEL (Lowest observed adverse effect level): 2.6 mg/m³
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

Ingredients:

Bisphenol A epoxy resin**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 50 mg/kg
Application Route: Ingestion
Exposure time: 14 Weeks
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
No-observed-effect level: 10 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 5 d
Method: Subchronic toxicity

Species: Mouse, male
NOAEL (No observed adverse effect level): 100 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 3 d

Method: Subchronic toxicity

Butanedioldiglycidyl ether**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 200 mg/kg
Application Route: Ingestion
Exposure time: 28 d
Number of exposures: 7 d
Method: Subacute toxicity

diantimony trioxide**:**
Species: Rat, male and female
NOEC: 1686 - 1879 mg/kg, >= 0.51 mg/m3
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 2,160 h
Number of exposures: 6 h
Method: OECD Test Guideline 452

o-cresyl glycidyl ether**:**
Species: Rat, male and female
NOEC: > 4 ppm
Test atmosphere: vapor
Exposure time: 4 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 412

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Bisphenol A epoxy resin:

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

Butanedioldiglycidyl ether:

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

diantimony trioxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 14.4 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

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

Toxicity to fish : LC50: 7.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

o-cresyl glycidyl ether:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.8 - 5.1 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

LC50 (Brachydanio rerio (zebrafish)): ca. 6.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Ingredients:

Bisphenol A epoxy resin:

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

Butanedioldiglycidyl ether:

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

diantimony trioxide:

Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Other): 1.77 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water

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

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): ca. 67.9 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202

o-cresyl glycidyl ether:

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): ca. 3.3 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202

Ingredients:

Bisphenol A epoxy resin:

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

Butanedioldiglycidyl ether:

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

diantimony trioxide:

Toxicity to algae	:	EC50 (Other): > 36.6 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water 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
Method: OECD Test Guideline 201

o-cresyl glycidyl ether**:**

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 5.1 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

Ingredients:

diantimony trioxide**:**

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 1.13 mg/l
Exposure time: 28 d
Test Type: flow-through test
Test substance: Fresh water

Ingredients:

Bisphenol A epoxy resin**:**

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

diantimony trioxide**:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.74 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

Ingredients:

Bisphenol A epoxy resin**:**

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

Butanedioldiglycidyl ether**:**

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

Test substance: Fresh water
Method: OECD Test Guideline 209

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether**:**
Toxicity to bacteria : EC50: > 1,000 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

o-cresyl glycidyl ether**:**
Toxicity to bacteria : IC50: > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
No data available

Persistence and degradability

Biodegradability - Product : Result: Not readily biodegradable.

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
Photodegradation	:	No data available
Impact on Sewage Treatment	:	No data available

Bioaccumulative potential

Ingredients:

Bisphenol A epoxy resin:

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

Ingredients:

Bisphenol A epoxy resin:

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

Butanedioldiglycidyl ether:

Partition coefficient: n-octanol/water	:	log Pow: -0.269 (25 °C) pH: 6.7 Method: OECD Test Guideline 117

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

Partition coefficient: n-octanol/water	:	log Pow: 3.59 (20 °C) pH: 7 Method: OECD Test Guideline 107

o-cresyl glycidyl ether:

Partition coefficient: n-octanol/water	:	log Pow: 2.5 (21 °C) Method: OECD Test Guideline 107

Mobility in soil

Mobility	:	No data available

Ingredients:

Bisphenol A epoxy resin:

Distribution among environmental compartments	:	Koc: 445.

Butanedioldiglycidyl ether:

Distribution among environmental compartments	:	Koc: 12.59. Method: OECD Test Guideline 121

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

Distribution among	:	Koc: ca. 755. Method: OECD Test Guideline 121

environmental compartments
o-cresyl glycidyl ether**:**
Distribution among environmental compartments : Koc: ca. 210. 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.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

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

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA

UN/ID No. : UN 3082

Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG

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

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

Not applicable for product as supplied.

Domestic regulation

ADG

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
Hazchem Code	:	3Z

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform Scheduling of Medicines and Poisons	:	Schedule 5
Australia Work Health and Safety Regulations - Schedule 10 Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.	:	Not listed

Other international regulations

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

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

TSCA	:	On TSCA Inventory
DSL	:	All components of this product are on the Canadian DSL.
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	not determined
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

Inventories

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

SECTION 16. OTHER INFORMATION

Further information

Other information	:	The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Sources of key data used to compile the Material Safety Data Sheet	:	Information taken from reference works and the literature., Information derived from practical experience.
Date format	:	dd.mm.yyyy

While 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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EPOCAST® 1619 B US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	04.03.2016	400001012497	Date of first issue: 04.03.2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EPOCAST® 1619 B US

Manufacturer or supplier's details

Company : Huntsman Advanced Materials (Australia) Pty Ltd
Address : ACN:09162879
Gate 3, 765 Ballarat Road
Deer Park,
Victoria 3023
Australia
Telephone : +613 9933 6691 (CS: HAM), 1300 366 819 (Toll-free - AU), 0800 441 216 (Toll-free - NZ)

E-mail address : Global_Product_EHS_AdMat@huntsman.com

Emergency telephone : Australia: 1800 786 152 (ALL HOURS)
International: +65 6336 6011 (ALL HOURS)

Recommended use of the chemical and restrictions on use

Recommended use : Hardener

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 4

Skin corrosion/irritation : Category 1B

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms :

Signal Word : Danger

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

H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.

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.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
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 or doctor/ physician.
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.
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 waste disposal plant.

Other hazards which do not result in classification

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Monoethanolamine	141-43-5	7 - 13
4,4'-isopropylidenediphenol	80-05-7	>= 10 - <= 30

Diethylenetriamine	111-40-0	>= 10 - <= 30
9-Octadecenoic acid (9Z)-, polymer with N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine	70321-87-8	>= 30 - <= 60
Aminoethylpiperazine	140-31-8	7 - 13
Monoethanolamine	141-43-5	>= 0 - <= 10
4,4'-isopropylidenediphenol	80-05-7	>= 10 - <= 30
Diethylenetriamine	111-40-0	>= 10 - <= 30
9-Octadecenoic acid (9Z)-, polymer with N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine	70321-87-8	>= 60 - <= 100
Aminoethylpiperazine	140-31-8	>= 0 - <= 10
Monoethanolamine	141-43-5	7 - 13
4,4'-isopropylidenediphenol	80-05-7	>= 10 - <= 30
Diethylenetriamine	111-40-0	>= 10 - <= 30
9-Octadecenoic acid (9Z)-, polymer with N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine	70321-87-8	>= 30 - <= 60
9-Octadecenoic acid (9Z)-, polymer with N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine	70321-87-8	>= 60 - <= 100
Diethylenetriamine	111-40-0	>= 10 - < 30
4,4'-isopropylidenediphenol	80-05-7	>= 10 - < 30
Monoethanolamine	141-43-5	< 10

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.
If unconscious place in recovery position and seek medical advice.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.

Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

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

SECTION 5. FIRE-FIGHTING 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 fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

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

Specific extinguishing methods : 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 fire-fighters : 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.

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

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

SECTION 7. HANDLING AND STORAGE

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

Advice on safe handling : Avoid formation of aerosol.
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 sensitization 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 vapors or spray mist.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

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

Materials to avoid : Strong acids
Strong bases
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Diethylenetriamine	111-40-0	TWA	1 ppm 4.2 mg/m3	AU OEL
	Further information: Sensitiser, Skin absorption			
		TWA	1 ppm	ACGIH
Monoethanolamine	141-43-5	TWA	3 ppm 7.5 mg/m3	AU OEL
		STEL	6 ppm 15 mg/m3	AU OEL
		TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH

Personal protective equipment

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

Refer to Australian/New Zealand Standard AS/NZS 1715 and AS/NZS 1716 for guidance on selection and use of respiratory devices.

Hand protection
Material : butyl-rubber

Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Nitrile rubber
10 - 480 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Refer to Australian/New Zealand Standard AS/NZS 2161.1: 2000 for guidance on selection and use of protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles.
Wear face-shield and protective suit for abnormal processing problems.
Refer to Australian/New Zealand Standard AS/NZS 1337:1992 for guidance on selection and use of protective eyeware.

Skin and body protection : impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	amber
Odor	:	ammoniacal
Odor Threshold	:	No data is available on the product itself.
pH	:	No data is available on the product itself.
Flash point	:	171 °C Method: Cleveland open cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Upper explosion limit	:	No data is available on the product itself.
Lower explosion limit	:	No data is available on the product itself.
Vapor pressure	:	> 1.333 hPa (20 °C)

Relative vapor density	:	1
Relative density	:	0.98
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.
Autoignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Viscosity		
Viscosity, dynamic	:	400 mPa.s
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available
Hazardous decomposition products	:	Carbon oxides Burning produces obnoxious and toxic fumes. Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Routes of exposure : No data is available on the product itself.

Acute toxicity

Ingredients:

Monoethanolamine**:**

Acute oral toxicityIngredients : LD50 (Rat, male and female): 1,089 mg/kg
Method: OECD Test Guideline 401

4,4'-isopropylidenediphenol**:**

Acute oral toxicityIngredients : LD50 (Rat, male and female): > 2,000 - < 5,000 mg/kg
Method: OECD Test Guideline 401

Assessment: The substance or mixture has no acute oral toxicity

Diethylenetriamine:
Acute oral toxicityIngredients : LD50 (Rat, male): 1,620 mg/kg

Aminoethylpiperazine:
Acute oral toxicityIngredients : LD50 (Rabbit, male): 2,097 mg/kg

Monoethanolamine:
Acute oral toxicityIngredients : LD50 (Rat, male and female): 1,089 mg/kg
Method: OECD Test Guideline 401

4,4'-isopropylidenediphenol:
Acute oral toxicityIngredients : LD50 (Rat, male and female): > 2,000 - < 5,000 mg/kg
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Acute oral toxicityIngredients : LD50 (Rabbit, male): 2,097 mg/kg

Monoethanolamine:
Acute oral toxicityIngredients : LD50 (Rat, male and female): 1,089 mg/kg
Method: OECD Test Guideline 401

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Acute oral toxicityIngredients : LD50 (Rat, male and female): > 2,000 - < 5,000 mg/kg
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Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral

toxicity

Monoethanolamine:
Acute oral toxicityIngredients : LD50 (Rat, male and female): 1,089 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity - Product : Acute toxicity estimate: 1.12 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Ingredients:

Monoethanolamine:
Acute dermal toxicity : LD50 (Rabbit, male and female): 2,504 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

4,4'-isopropylidenediphenol:
Acute dermal toxicity : LD50 (Rabbit, male): ca. 6,400 mg/kg

Diethylenetriamine:
Acute dermal toxicity : LD50 (Rabbit): 1,045 mg/kg
GLP: no

Aminoethylpiperazine:
Acute dermal toxicity : LD50 (Rabbit): 866 mg/kg

Monoethanolamine:
Acute dermal toxicity : LD50 (Rabbit, male and female): 2,504 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

4,4'-isopropylidenediphenol:
Acute dermal toxicity : LD50 (Rabbit, male): ca. 6,400 mg/kg

Diethylenetriamine:
Acute dermal toxicity : LD50 (Rabbit): 1,045 mg/kg
GLP: no

Aminoethylpiperazine:
Acute dermal toxicity : LD50 (Rabbit): 866 mg/kg

Monoethanolamine**:**
Acute dermal toxicity : LD50 (Rabbit, male and female): 2,504 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

4,4'-isopropylidenediphenol**:**
Acute dermal toxicity : LD50 (Rabbit, male): ca. 6,400 mg/kg

Diethylenetriamine**:**
Acute dermal toxicity : LD50 (Rabbit): 1,045 mg/kg
GLP: no

Diethylenetriamine**:**
Acute dermal toxicity : LD50 (Rabbit): 1,045 mg/kg
GLP: no

4,4'-isopropylidenediphenol**:**
Acute dermal toxicity : LD50 (Rabbit, male): ca. 6,400 mg/kg

Monoethanolamine**:**
Acute dermal toxicity : LD50 (Rabbit, male and female): 2,504 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

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

Skin corrosion/irritation

Product:

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitization

Product:

Remarks: Causes sensitization.

Assessment: No data available

Chronic toxicity

Germ cell mutagenicity

Ingredients:

Monoethanolamine:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

Metabolic activation: negative
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

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

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

Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Monoethanolamine:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

Metabolic activation: negative
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

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

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

Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Monoethanolamine:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

Metabolic activation: negative
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

Monoethanolamine:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

Metabolic activation: negative
Result: negative

Ingredients:

Monoethanolamine:
Genotoxicity in vivo : Application Route: Oral
Exposure time: 24 h
Dose: 375 - 1500 mg/kg
Method: OECD Test Guideline 474
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

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

Aminoethylpiperazine:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 175 - 560 mg/kg
Method: OECD Test Guideline 474
Result: negative

Monoethanolamine:
Genotoxicity in vivo : Application Route: Oral
Exposure time: 24 h
Dose: 375 - 1500 mg/kg
Method: OECD Test Guideline 474
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

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

Aminoethylpiperazine:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 175 - 560 mg/kg
Method: OECD Test Guideline 474
Result: negative

Monoethanolamine:
Genotoxicity in vivo : Application Route: Oral
Exposure time: 24 h
Dose: 375 - 1500 mg/kg
Method: OECD Test Guideline 474
Result: negative

4,4'-isopropylidenediphenol:
Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

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

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

Monoethanolamine**:**
Genotoxicity in vivo : Application Route: Oral
Exposure time: 24 h
Dose: 375 - 1500 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Ingredients:

4,4'-isopropylidenediphenol**:**
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Frequency of Treatment: 7 daily
Result: negative

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

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

Diethylenetriamine**:**
Species: Mouse, (male)
Application Route: Dermal
Dose: 56.3 mg/kg
Frequency of Treatment: 3 daily
Result: negative

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

Reproductive toxicity

Ingredients:

Monoethanolamine**:**
Effects on fertility : Species: Rat, male and female
Application Route: Oral
Target Organs: Reproductive organs
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

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.

Diethylenetriamine**:**
Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOAEL (No observed adverse effect level): 30 mg/kg wet weight
Method: OECD Test Guideline 421

Aminoethylpiperazine:

Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: No effects on fertility and early embryonic development were detected.

Monoethanolamine:

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

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.

Diethylenetriamine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOAEL (No observed adverse effect level): 30 mg/kg wet weight
Method: OECD Test Guideline 421

Aminoethylpiperazine:

Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: No effects on fertility and early embryonic development were detected.

Monoethanolamine:

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

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.

Diethylenetriamine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOAEL (No observed adverse effect

level): 30 mg/kg wet weight
Method: OECD Test Guideline 421

Diethylenetriamine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOAEL (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.

Monoethanolamine:

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

Ingredients:

Monoethanolamine:

Effects on fetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 120 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rat
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

4,4'-isopropylidenediphenol:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects.

Diethylenetriamine:

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

Aminoethylpiperazine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 224 - 285 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects.

Monoethanolamine:

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 120 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rat
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

4,4'-isopropylidenediphenol:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects.

Diethylenetriamine:

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

Aminoethylpiperazine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 224 - 285 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects.

Monoethanolamine:

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 120 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rat

Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

4,4'-isopropylidenediphenol**:**

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects.

Diethylenetriamine**:**

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

Diethylenetriamine**:**

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

4,4'-isopropylidenediphenol**:**

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects.

Monoethanolamine**:**

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 120 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rat
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Ingredients:

4,4'-isopropylidenediphenol**:**

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

4,4'-isopropylidenediphenol**:**
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

4,4'-isopropylidenediphenol**:**
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

4,4'-isopropylidenediphenol**:**
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT-single exposure

Ingredients:

Monoethanolamine**:**
Routes of exposure: Inhalation
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.

Diethylenetriamine**:**
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

Monoethanolamine**:**
Routes of exposure: Inhalation
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.

Diethylenetriamine**:**
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

Monoethanolamine**:**
Routes of exposure: Inhalation
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.

Diethylenetriamine**:**
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

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.

Monoethanolamine**:**
Routes of exposure: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT-repeated exposure

No data available

Repeated dose toxicity

Ingredients:

Monoethanolamine**:**
Species: Rat, male and female
NOEC: 300 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 672 h
Number of exposures: 7 d
Method: OECD Test Guideline 412

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 (Lowest observed adverse effect level): 600 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d
Method: Subchronic toxicity

Diethylenetriamine**:**
Species: Rat, male and female
NOEC: 70 - 80 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 360 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): 114 mg/kg/d
Application Route: Skin contact
Exposure time: 9,600 h
Number of exposures: 6 d
Method: Chronic toxicity

Aminoethylpiperazine**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 151 - 285 mg/kg/d
Application Route: Ingestion
Exposure time: 672 h
Method: Subacute toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): > 1000 mg/kg/d
Application Route: Skin contact
Exposure time: 696 h
Number of exposures: 5 d
Method: Subacute toxicity

Monoethanolamine**:**
Species: Rat, male and female
NOEC: 300 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 672 h
Number of exposures: 7 d
Method: OECD Test Guideline 412

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 (Lowest observed adverse effect level): 600 mg/kg
Application Route: Ingestion

Exposure time: 672 h
Number of exposures: 7 d
Method: Subchronic toxicity

Diethylenetriamine**:**
Species: Rat, male and female
NOEC: 70 - 80 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 360 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): 114 mg/kg/d
Application Route: Skin contact
Exposure time: 9,600 h
Number of exposures: 6 d
Method: Chronic toxicity

Aminoethylpiperazine**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 151 - 285 mg/kg/d
Application Route: Ingestion
Exposure time: 672 h
Method: Subacute toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): > 1000 mg/kg/d
Application Route: Skin contact
Exposure time: 696 h
Number of exposures: 5 d
Method: Subacute toxicity

Monoethanolamine**:**
Species: Rat, male and female
NOEC: 300 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 672 h
Number of exposures: 7 d
Method: OECD Test Guideline 412

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 (Lowest observed adverse effect level): 600 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d
Method: Subchronic toxicity

Diethylenetriamine**:**
Species: Rat, male and female
NOEC: 70 - 80 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 360 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): 114 mg/kg/d
Application Route: Skin contact
Exposure time: 9,600 h
Number of exposures: 6 d
Method: Chronic toxicity

Diethylenetriamine**:**
Species: Rat, male and female
NOEC: 70 - 80 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 360 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): 114 mg/kg/d
Application Route: Skin contact
Exposure time: 9,600 h
Number of exposures: 6 d
Method: Chronic toxicity

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 (Lowest observed adverse effect level): 600 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d

Method: Subchronic toxicity

Monoethanolamine**:**
Species: Rat, male and female
NOEC: 300 mg/m3
Application Route: Ingestion
Test atmosphere: vapor
Exposure time: 672 h
Number of exposures: 7 d
Method: OECD Test Guideline 412

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity
No data available

Experience with human exposure
General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution
No data available

Neurological effects
No data available

Further information

Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:
Monoethanolamine**:**
Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 349 mg/l

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

4,4'-isopropylidenediphenol:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l
Exposure time: 96 h

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.

Aminoethylpiperazine:
Toxicity to fish : LC50: 2,190 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Monoethanolamine:
Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 349 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water

4,4'-isopropylidenediphenol:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l
Exposure time: 96 h

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.

Aminoethylpiperazine:
Toxicity to fish : LC50: 2,190 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Monoethanolamine:
Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 349 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water

4,4'-isopropylidenediphenol:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l
Exposure time: 96 h

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.

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

Monoethanolamine:
Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 349 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water

Ingredients:

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 65 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

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)):

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

Aminoethylpiperazine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 58 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 65 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

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

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)):

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

Aminoethylpiperazine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 58 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 65 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

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)):

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

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

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)):

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 65 mg/l
Exposure time: 48 h

Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Ingredients:

Monoethanolamine:
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 2.5 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

4,4'-isopropylidenediphenol:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1 mg/l
Exposure time: 96 h

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

Aminoethylpiperazine:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

Monoethanolamine:
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 2.5 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

4,4'-isopropylidenediphenol:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1 mg/l
Exposure time: 96 h

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

Aminoethylpiperazine:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
Exposure time: 72 h
Test substance: Fresh water

Method: OECD Test Guideline 201

Monoethanolamine:
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 2.5 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

4,4'-isopropylidenediphenol:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1 mg/l
Exposure time: 96 h

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

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

4,4'-isopropylidenediphenol:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1 mg/l
Exposure time: 96 h

Monoethanolamine:
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 2.5 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

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

Ingredients:

Monoethanolamine:
Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 1.2 mg/l
Exposure time: 30 d
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.

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

Monoethanolamine:
Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 1.2 mg/l
Exposure time: 30 d
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.

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

Monoethanolamine:
Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 1.2 mg/l
Exposure time: 30 d
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.

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

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.

Monoethanolamine:
Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 1.2 mg/l
Exposure time: 30 d
Test substance: Fresh water
Method: OECD Test Guideline 210

Ingredients:

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.85 mg/l
Exposure time: 21 d
Test substance: Fresh water
Method: OECD Test Guideline 211

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.

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.85 mg/l
Exposure time: 21 d
Test substance: Fresh water
Method: OECD Test Guideline 211

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.

Monoethanolamine:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.85 mg/l
Exposure time: 21 d
Test substance: Fresh water
Method: OECD Test Guideline 211

Diethylenetriamine:
Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): 5.6 mg/l
Exposure time: 21 d

(Chronic toxicity)
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.20.

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.

Monoethanolamine**:**
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.85 mg/l
Exposure time: 21 d
Test substance: Fresh water
Method: OECD Test Guideline 211

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

Toxicity to bacteria : No data available

Ingredients:

Diethylenetriamine**:**
Toxicity to soil dwelling organisms : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 56 d
Method: OECD Test Guideline 222

Diethylenetriamine**:**
Toxicity to soil dwelling organisms : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 56 d
Method: OECD Test Guideline 222

Diethylenetriamine**:**
Toxicity to soil dwelling organisms : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 56 d
Method: OECD Test Guideline 222

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

Ingredients:

Monoethanolamine**:**

Acute aquatic toxicity : Harmful to aquatic life.

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

Monoethanolamine:
Acute aquatic toxicity : Harmful to aquatic life.

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

Monoethanolamine:
Acute aquatic toxicity : Harmful to aquatic life.

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

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

Monoethanolamine:
Acute aquatic toxicity : Harmful to aquatic life.

Ingredients:

4,4'-isopropylidenediphenol:
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

4,4'-isopropylidenediphenol:
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

4,4'-isopropylidenediphenol:
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

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

Further information:
No data available

Persistence and degradability

Ingredients:

Monoethanolamine:
Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

4,4'-isopropylidenediphenol:
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 1 - 2 %
Exposure time: 28 d

Diethylenetriamine:
Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 21 d
Method: OECD Test Guideline 301D

Aminoethylpiperazine:
Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Monoethanolamine:
Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

4,4'-isopropylidenediphenol:
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 1 - 2 %
Exposure time: 28 d

Diethylenetriamine:
Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 21 d
Method: OECD Test Guideline 301D

Aminoethylpiperazine:
Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Monoethanolamine:
Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

4,4'-isopropylidenediphenol:
Biodegradability : Result: Not readily biodegradable.

Biodegradation: 1 - 2 %
Exposure time: 28 d

Diethylenetriamine:
Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 21 d
Method: OECD Test Guideline 301D

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

Monoethanolamine:
Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

Ingredients:

Aminoethylpiperazine:
Biochemical Oxygen Demand (BOD) : 5 mg/l
Incubation time: 5 d

Aminoethylpiperazine:
Biochemical Oxygen Demand (BOD) : 5 mg/l
Incubation time: 5 d

Ingredients:

Aminoethylpiperazine:
Chemical Oxygen Demand (COD) : 560 mg/l

Aminoethylpiperazine:
Chemical Oxygen Demand (COD) : 560 mg/l

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

Ingredients:

Monoethanolamine:
Photodegradation : Test Type: Air
Rate constant: 35.844
Degradation (direct photolysis): 50 %

Diethylenetriamine:
Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

Aminoethylpiperazine:
Photodegradation : Test Type: Air
Degradation (direct photolysis): 50 %

Test Type: Water

Monoethanolamine:
Photodegradation : Test Type: Air
Rate constant: 35.844
Degradation (direct photolysis): 50 %

Diethylenetriamine:
Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

Aminoethylpiperazine:
Photodegradation : Test Type: Air
Degradation (direct photolysis): 50 %

Test Type: Water

Monoethanolamine:
Photodegradation : Test Type: Air
Rate constant: 35.844
Degradation (direct photolysis): 50 %

Diethylenetriamine:
Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

Diethylenetriamine:
Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

Monoethanolamine:
Photodegradation : Test Type: Air

Rate constant: 35.844
Degradation (direct photolysis): 50 %

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Ingredients:

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.

Aminoethylpiperazine:
Bioaccumulation : Species: Fish
Remarks: Does not bioaccumulate.

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.

Aminoethylpiperazine:
Bioaccumulation : Species: Fish
Remarks: Does not bioaccumulate.

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.

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.

Ingredients:

Monoethanolamine:
Partition coefficient: n-octanol/water : log Pow: -1.31 (25 °C)

Diethylenetriamine:

Partition coefficient: n-octanol/water	:	log Pow: -1.58 (20 °C) pH: 7
Aminoethylpiperazine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.48 (20 °C)
Monoethanolamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.31 (25 °C)
Diethylenetriamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.58 (20 °C) pH: 7
Aminoethylpiperazine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.48 (20 °C)
Monoethanolamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.31 (25 °C)
Diethylenetriamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.58 (20 °C) pH: 7
Diethylenetriamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.58 (20 °C) pH: 7
Monoethanolamine:		
Partition coefficient: n-octanol/water	:	log Pow: -1.31 (25 °C)

Mobility in soil

Mobility	:	No data available

Ingredients:

Monoethanolamine:		
Distribution among environmental compartments	:	Koc: 1.167.
Diethylenetriamine:		
Distribution among environmental compartments	:	Koc: 19111.
Aminoethylpiperazine:		
Distribution among environmental compartments	:	Koc: ca. 37000.
Monoethanolamine:		
Distribution among environmental compartments	:	Koc: 1.167.
Diethylenetriamine:		
Distribution among environmental compartments	:	Koc: 19111.
Aminoethylpiperazine:		

Distribution among environmental compartments	:	Koc: ca. 37000.
Monoethanolamine:		
Distribution among environmental compartments	:	Koc: 1.167.
Diethylenetriamine:		
Distribution among environmental compartments	:	Koc: 19111.
Diethylenetriamine:		
Distribution among environmental compartments	:	Koc: 19111.
Monoethanolamine:		
Distribution among environmental compartments	:	Koc: 1.167.
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 with long lasting effects.
Global warming potential (GWP)	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA

UN/ID No.	:	UN 2079
Proper shipping name	:	Diethylenetriamine SOLUTION
Class	:	8
Packing group	:	II
Labels	:	Corrosive
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG

UN number	:	UN 2079
Proper shipping name	:	DIETHYLENETRIAMINE SOLUTION
Class	:	8
Packing group	:	II
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.

Domestic regulation

ADG

UN number	:	UN 2079
Proper shipping name	:	DIETHYLENETRIAMINE SOLUTION
Class	:	8
Packing group	:	II
Labels	:	8
Hazchem Code	:	2X

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

R-phrase(s)	:	R62	Possible risk of impaired fertility.
		R26	Very toxic by inhalation.
		R34	Causes burns.
		R37	Irritating to respiratory system.
		R43	May cause sensitization by skin contact.
S-phrase(s)	:	S26	In case of contact with eyes, rinse

	immediately with plenty of water and seek medical advice.
S28	After contact with skin, wash immediately with plenty of soap and water.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

Standard for the Uniform Scheduling of Medicines and Poisons : No poison schedule number allocated

Australia Work Health and Safety Regulations - Schedule 10 Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals. : Not listed

Other international regulations

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

CH INV	:	The mixture contains substances listed on the Swiss Inventory
TSCA	:	On TSCA Inventory
DSL	:	This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	not determined
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	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), TSCA (USA)

SECTION 16. OTHER INFORMATION

Date format : dd.mm.yyyy

While 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.