ARALDITE® 2014-2 RESIN

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SECTION 1: Identification of the hazardous chemical and of the supplier

Product identifier

Product name : ARALDITE® 2014-2 RESIN

Recommended use of the chemical and restrictions on use

Recommended use : Epoxy constituents

Manufacturer or supplier's details

Company : Huntsman Advanced Materials (Singapore) Pte Ltd.
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189720
Singapore
Telephone : +65 6297 3363
Telefax : +65 6295 2933

Company : Huntsman Singapore Pte Ltd c/o Tioxide (Malaysia) Sdn Bhd
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SECTION 2: Hazards identification

Classification of the hazardous chemical

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

Hazardous to the aquatic environment - chronic hazard : Category 2

Label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
Response:
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.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

Other hazards which do not result in classification

No information available.

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Bisphenol A epoxy resin	25068-38-6	>= 30 - <= 60
bisphenol F-epoxy resin	9003-36-5	>= 7 - <= 13
Butanedioldiglycidyl ether	2425-79-8	>= 1 - <= 3
bis(2,3-epoxypropyl) terephthalate	7195-44-0	>= 1 - <= 3
tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate	7237-83-4	>= 0.1 - <= 1

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 : 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	:	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: Firefighting measures

Extinguishing media

Suitable extinguishing media	:	No data is available on the product itself.
Unsuitable extinguishing media	:	High volume water jet

Physicochemical hazards arising from the chemical

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.

Special protective equipment and precautions for fire-fighters

Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
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.

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

Handling

Precautions for safe handling

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. 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.

Storage

Conditions for safe storage, including any incompatibilities

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. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	:	Strong acids Strong bases Strong oxidizing agents
Recommended storage temperature	:	2 - 40 °C

SECTION 8: Exposure controls and personal protection

Control parameters

Contains no substances with occupational exposure limit values.

Individual protection measures, such as personal protective equipment

Eye/face protection	:	Eye wash bottle with pure water Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.
Skin protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hand protection		
Material	:	butyl-rubber
Break through time	:	> 8 h
Material	:	Solvent-resistant gloves (butyl-rubber)
Material	:	Nitrile rubber
Material	:	Neoprene gloves
Material	:	PVC
Material	:	butyl-rubber
Break through time	:	10 - 480 min
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
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
Color	:	beige
Odor	:	slight
Odor Threshold	:	No data is available on the product itself.
pH	:	ca. 7, Concentration: 500 g/l (20 °C)
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	> 200 °C

Flash point	:	> 100 °C Method: 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	:	< 1.33 hPa (20 °C)
Relative vapor density	:	No data is available on the product itself.
Relative density	:	No data is available on the product itself.
Density	:	1.6 g/cm3 (25 °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.
Autoignition temperature	:	does not ignite
Decomposition temperature	:	> 200 °C
Viscosity		
Viscosity, dynamic	:	92,800 mPa.s (25 °C) Method: Other guidelines
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
Incompatible materials	:	No data available
Hazardous decomposition products	:	Carbon oxides Burning produces obnoxious and toxic fumes.

SECTION 11: Toxicological information

Information on likely routes of exposure : None known.

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

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

bisphenol F-epoxy resin**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471

Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

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

bis(2,3-epoxypropyl) terephthalate**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

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

bisphenol F-epoxy resin**:**
Genotoxicity in vivo : Cell type: Somatic
Application Route: Oral

Exposure time: 48 h
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 486
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

bis(2,3-epoxypropyl) terephthalate**:**

Genotoxicity in vivo : Application Route: Oral
Method: OECD Test Guideline 483
Result: negative

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

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**

Genotoxicity in vivo : Application Route: Oral
Method: OECD Test Guideline 483
Result: negative

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

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.

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

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.

bisphenol F-epoxy resin**:**
Species: Rat, male and female

Application Route: Oral
Method: OECD Test Guideline 416
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.

bisphenol F-epoxy resin**:**

Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 30 mg/kg body weight
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

bisphenol F-epoxy resin**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 250 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks
Number of exposures: 7 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

bis(2,3-epoxypropyl) terephthalate**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): > 240 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d
Method: Subacute toxicity

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**
Species: Rat, male
NOAEL (No observed adverse effect level): 150 mg/kg/d
Application Route: Ingestion
Exposure time: 672 h
Number of exposures: 7 d
Method: Subacute toxicity

Species: Rat, female
NOAEL (No observed adverse effect level): >= 500 mg/kg/d
Application Route: Ingestion
Exposure time: 672 h

Number of exposures: 7 d
Method: Subacute toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

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

bisphenol F-epoxy resin**:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.55 mg/l
Exposure time: 96 h

Test Type: semi-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

bis(2,3-epoxypropyl) terephthalate:
Toxicity to fish : LC50: 8.8 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 6.7 mg/l
Exposure time: 96 h
Test Type: semi-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

bisphenol F-epoxy resin:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.6 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

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

bis(2,3-epoxypropyl) terephthalate:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 81 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate:
Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 21.7 mg/l

aquatic invertebrates
Exposure time: 48 h
Test Type: semi-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

bisphenol F-epoxy resin**:**

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 1.8 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

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

bis(2,3-epoxypropyl) terephthalate**:**

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 2.94 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 27.45 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

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

bisphenol F-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
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

bisphenol F-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

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**

Toxicity to bacteria	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test substance: brackish 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

Ingredients:

bisphenol F-epoxy resin**:**

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

Ingredients:

bisphenol F-epoxy resin**:**

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
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 10.4334 %

Persistence and degradability

Ingredients:

Bisphenol A epoxy resin**:**
Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

bisphenol F-epoxy resin**:**
Biodegradability : Inoculum: activated sludge
Concentration: 3 mg/l
Result: Not readily biodegradable.
Biodegradation: ca. 0 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.E.

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

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**
Biodegradability : Inoculum: Fresh water
Result: Not readily biodegradable.
Biodegradation: 59 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC)	:	No data available
Physico-chemical removability	:	No data available
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.

bisphenol F-epoxy resin**:**

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 150 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

bisphenol F-epoxy resin**:**

Partition coefficient: n-octanol/water	:	log Pow: 2.7 - 3.6 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

bis(2,3-epoxypropyl) terephthalate**:**

Partition coefficient: n-octanol/water	:	log Pow: 1.7 (25 °C) Method: OECD Test Guideline 117 GLP: yes

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**

Partition coefficient: n-octanol/water	:	log Pow: 0.9 (25 °C) Method: OECD Test Guideline 117

Mobility in soil

Mobility	:	No data available

Ingredients:

Bisphenol A epoxy resin**:**

Distribution among environmental compartments	:	Koc: 445.

bisphenol F-epoxy resin**:**

Distribution among environmental compartments	:	Koc: 4460. Method: OECD Test Guideline 121

Butanedioldiglycidyl ether**:**

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

bis(2,3-epoxypropyl) terephthalate**:**

Distribution among environmental compartments	:	Koc: 2. Method: OECD Test Guideline 121

tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate**:**

Distribution among environmental compartments	:	Koc: 251. 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 information

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.

Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation under the Malaysia Environmental Quality Act 1974 and relevant regulations under the Act.

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, BISPHENOL F 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, BISPHENOL F 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.

SECTION 15: Regulatory information

Safety, health, and environmental regulations specific for the hazardous chemical

MALAYSIA. OZONE DEPLETING SUBSTANCES (ODS) : Not applicable

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	:	Not On TSCA Inventory

DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL.
AICS	:	Low volume exemption
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	Low volume exemption
IECSC	:	Low volume exemption

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

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.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.