

ARALDITE® 501 RESIN

Version	Revision Date:	SDS Number:	Date of last issue:
2.0	11/30/2021	400001008611	07/20/2017
			Date of first issue: 07/20/2017

Print Date 04/12/2025

SECTION 1. IDENTIFICATION

Product name : ARALDITE® 501 RESIN

Manufacturer or supplier's detailsCompany name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980The Woodlands,
TX 77387
United States of America (USA)

Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

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

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitisation : Category 1

Short-term (acute) aquatic hazard : Category 2

Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.Precautionary statements : **Prevention:**

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P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
Storage:
Not available
Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Phenol, polymer with formaldehyde, glycidyl ether	28064-14-4	70 - 90
GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL	9072-62-2	20 - 30

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

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

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- | | | |
|---|---|---|
| In case of skin contact | : | If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes. |
| In case of eye contact | : | Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist. |
| If swallowed | : | Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician. |
| Most important symptoms and effects, both acute and delayed | : | None known. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| Notes to physician | : | Treat symptomatically. |

SECTION 5. FIREFIGHTING MEASURES

- | | | |
|--------------------------------------|---|---|
| Suitable extinguishing media | : | Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical |
| Unsuitable extinguishing media | : | Exercise caution when using a high volume water jet as it may scatter and spread fire |
| Specific hazards during firefighting | : | Do not allow run-off from fire fighting to enter drains or water courses. |
| Hazardous combustion products | : | Carbon oxides |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: 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	: Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers.
Materials to avoid	: For incompatible materials please refer to Section 10 of this SDS.
Recommended storage temperature	: 36 - 104 °F / 2 - 40 °C
Further information on storage stability	: Stable under normal conditions.

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

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Material : Solvent-resistant gloves (butyl-rubber)

Material : Nitrile rubber

Break through time : 10 - 480 min

Material : Neoprene gloves

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
The suitability for a specific workplace should be discussed with the producers of the protective gloves.Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid

Colour : colourless

Odour : slight

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

pH : substance/mixture is non-soluble (in water)

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

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Boiling point	: > 392 °F / > 200 °C
Flash point	: > 212 °F / > 100 °C Method: Pensky-Martens closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 1.2 g/cm ³ (77 °F / 25 °C)
Solubility(ies)	
Water solubility	: insoluble (68 °F / 20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: > 392 °F / > 200 °C
Self-Accelerating decomposition temperature (SADT)	: No data is available on the product itself.
Viscosity	
Viscosity, dynamic	: 20 - 120 mPa.s (77 °F / 25 °C)
Explosive properties	: No data is available on the product itself.
Oxidizing properties	: No data is available on the product itself.
Particle size	: No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.

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Possibility of hazardous reactions : No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition products : carbon dioxide
carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

Acute oral toxicityComponents : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Acute oral toxicityComponents : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : No data available

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

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

Skin corrosion/irritation**Components:**

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Phenol, polymer with formaldehyde, glycidyl ether:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Species: No information available.

Assessment: Irritant

Result: Irritating to skin.

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

Phenol, polymer with formaldehyde, glycidyl ether:

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Species: No information available.

Result: Irritating to eyes.

Assessment: Moderate eye irritant

Respiratory or skin sensitisation**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Exposure routes: Skin

Species: No information available.

Result: May cause sensitisation by skin contact.

Assessment: No data available

Germ cell mutagenicity**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

Result: positive

Concentration: 0 - 5000 ug/plate

Metabolic activation: with and without metabolic activation

Result: positive

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Genotoxicity in vivo : Cell type: Germ

Application Route: Oral

Result: negative

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Cell type: Somatic
Application Route: Oral
Dose: 0 - 5000 mg/kg
Result: negative

Germ cell mutagenicity- : No data available
Assessment

Carcinogenicity**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

Species: Rat, male and female

Application Route: Oral

Exposure time: 24 month(s)

Dose: 15 mg/kg

Frequency of Treatment: 7 daily

Method: OECD Test Guideline 453

Result: negative

Species: Mouse, male

Application Route: Dermal

Exposure time: 24 month(s)

Dose: .1 mg/kg

Frequency of Treatment: 3 daily

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 daily

Method: OECD Test Guideline 453

Result: negative

Carcinogenicity - : No data available
Assessment

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive toxicity**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Effects on foetal development : Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: No observed adverse effect level:
30 mg/kg body weight
Result: No teratogenic effects

Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
60 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Ingestion
Exposure time: 14 Weeks
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOEL: 10 mg/kg

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Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 5 d
Method: Subchronic toxicity

Species: Mouse, male
NOAEL: 100 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 3 d
Method: Subchronic toxicity

Repeated dose toxicity - : No data available
Assessment

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

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

Phenol, polymer with formaldehyde, glycidyl ether:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.5 mg/l

Exposure time: 96 h

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Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 67 mg/l
Exposure time: 96 h

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

EC50 (Daphnia magna (Water flea)): 2.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 90 mg/l
Exposure time: 48 h

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water

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

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Toxicity to fish (Chronic toxicity) : GLP: yes

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

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

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

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

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
 Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

GLYCOLS, POLYPROPYLENE, 2,3-EPOXYPROPYL:

Biodegradability : Result: Not biodegradable
 Biodegradation: 7 %
 Exposure time: 28 d
 Method: OECD Test Guideline 302B

Result: Not readily biodegradable.
 Biodegradation: 8 - 27 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

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ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Stability in water : Degradation half life(DT50): 4.83 d (77 °F / 25 °C) pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh waterDegradation half life(DT50): 7.1 d (77 °F / 25 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh waterDegradation half life(DT50): 3.58 d (77 °F / 25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

Phenol, polymer with formaldehyde, glycidyl ether:

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

Mobility : No data available

Components:

Phenol, polymer with formaldehyde, glycidyl ether:

Distribution among environmental compartments : Koc: 445
Stability in soil : No data available**Other adverse effects**

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Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

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

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No.	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (EPOXY PHENOL NOVOLAC RESIN)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo)	: 964

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aircraft)
Packing instruction : 964
(passenger aircraft)
Environmentally hazardous : yes

IMDG-Code

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

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

Not applicable for product as supplied.

National Regulations**49 CFR**

UN/ID/NA number : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(EPOXY PHENOL NOVOLAC RESIN)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes
Remarks : Shipment by ground under DOT is non-regulated; however it
may be shipped per the applicable hazard classification to
facilitate multi-modal transport involving ICAO (IATA) or IMO.

Special precautions for user

Remarks : 49CFR: no dangerous good in non-bulk packaging

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 311/312 Hazards : Respiratory or skin sensitisation
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean

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Air Act Section 112 (40 CFR 61).

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

DSL	: All components of this product are on the Canadian DSL
AIIC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory

Inventories

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

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

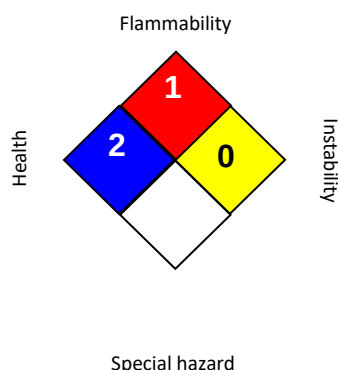
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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

ARALDITE® 501 RESIN

Version 2.0 Revision Date: 11/30/2021 SDS Number: 400001008611 Date of last issue: 07/20/2017
Date of first issue: 07/20/2017

Print Date 04/12/2025

SECTION 16. OTHER INFORMATION**Further information****NFPA 704:****HMIS® IV:**

HEALTH		2
FLAMMABILITY		1
PHYSICAL HAZARD		0

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

Revision Date : 11/30/2021

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.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

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.

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1.1	11/07/2022	400001007736	06/22/2016
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SECTION 1. IDENTIFICATION

Product name : ARALDITE® 501 HARDENER

Manufacturer or supplier's detailsCompany name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980The Woodlands,
TX 77387
United States of America (USA)

Telephone : Non-Emergency: (800) 257-5547

E-mail address : Global_Product_EHS_AdMat@huntsman.com

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

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Flammable liquids	: Category 3
Acute toxicity (Oral)	: Category 4
Acute toxicity (Dermal)	: Category 3
Skin corrosion	: Category 1B
Serious eye damage	: Category 1
Skin sensitisation	: Category 1
Short-term (acute) aquatic hazard	: Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.

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H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H402 Harmful to aquatic life.

Precautionary statements

: **Prevention:**P210 Keep away from heat/ sparks/ open flames/ hot surfaces.
No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting
equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing mist or vapours.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.**Response:**P301 + P312 + P330 IF SWALLOWED: Call a POISON
CENTER/ doctor if you feel unwell. Rinse mouth.P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT
induce vomiting.P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately
all contaminated clothing. Rinse skin with water/ shower.P304 + P340 + P310 IF INHALED: Remove person to fresh air
and keep comfortable for breathing. Immediately call a POISON
CENTER/ doctor.P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with
water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing. Immediately call a POISON
CENTER/ doctor.P333 + P313 If skin irritation or rash occurs: Get medical advice/
attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or
alcohol-resistant foam to extinguish.**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:P501 Dispose of contents/container to an approved facility in
accordance with local, regional, national and international
regulations.**Other hazards**

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

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Chemical nature : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
3-aminopropyldiethylamine	104-78-9	90 - 100

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

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing

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If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No hazardous combustion products are known

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Refer to protective measures listed in sections 7 and 8.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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

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respective authorities.

Methods and materials for containment and cleaning up : Neutralise with acid.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Prevent unauthorized access.
No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Keep in properly labelled containers.

Materials to avoid : Do not store near acids.

Recommended storage temperature : 36 - 104 °F / 2 - 40 °C

Further information on storage stability : Stable under normal conditions.

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

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Material : Solvent-resistant gloves (butyl-rubber)

Material : Nitrile rubber

Break through time : 10 - 480 min

Remarks

: Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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

Eye protection

: Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

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

Hygiene measures

: Avoid contact with skin, eyes and clothing.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : violet

Odour : amine-like

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

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pH	: ca. 11 (68 °F / 20 °C) Concentration: 500 g/l
Melting point/freezing point	: No data is available on the product itself.
Boiling point	: 311 °F / 155 °C
Flash point	: 122 °F / 50 °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.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 0.83 g/cm ³ (77 °F / 25 °C)
Solubility(ies)	
Water solubility	: completely miscible (68 °F / 20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: > 392 °F / > 200 °C
Self-Accelerating decomposition temperature (SADT)	: No data is available on the product itself.
Viscosity	
Viscosity, dynamic	: 1,400 - 4,000 mPa.s (77 °F / 25 °C)
Explosive properties	: No data is available on the product itself.
Oxidizing properties	: No data is available on the product itself.
Particle size	: No data is available on the product itself.

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	:	Carbon oxides Nitrogen oxides (NOx) Burning produces noxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Components:****3-aminopropyldiethylamine:**

Acute oral toxicity	:	LD50 (Rat, male and female): ca. 830 mg/kg Method: OECD Test Guideline 401 GLP: no Assessment: The component/mixture is moderately toxic after single ingestion.
Acute dermal toxicity	:	LD50 (Rabbit, male): 524 mg/kg Method: OECD Test Guideline 402 Assessment: The component/mixture is toxic after single contact with skin.

Skin corrosion/irritation**Components:****3-aminopropyldiethylamine:**

Species	:	Rabbit
Result	:	Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation**Components:****3-aminopropyldiethylamine:**

Species	:	Rabbit
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Result	:	Risk of serious damage to eyes.
Assessment	:	Risk of serious damage to eyes.

Result	:	Irreversible effects on the eye
Assessment	:	Risk of serious damage to eyes.

Respiratory or skin sensitisation**Components:****3-aminopropyldiethylamine:**

Result	:	May cause sensitisation by skin contact.
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Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	yes

Germ cell mutagenicity**Components:****3-aminopropyldiethylamine:**

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
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Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
------	---

OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
------	--

NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
-----	---

Reproductive toxicity**Components:****3-aminopropyldiethylamine:**

Effects on foetal development	:	Species: Rat, female Application Route: Oral General Toxicity Maternal: NOAEC: 50 mg/kg body weight Teratogenicity: NOAEL: 250 mg/kg body weight Developmental Toxicity: NOAEL: 50 mg/kg body weight Method: OECD Test Guideline 414
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STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:****3-aminopropyldiethylamine:**

Species	: Rat, male
NOAEL	: >= 750 mg/kg
Application Route	: Oral
Exposure time	: 13 w
Number of exposures	: daily
Dose	: 0, 50, 250, 750 mg/kg
Method	: OECD Test Guideline 408
GLP	: yes

Species	: Rat, female
NOAEL	: 250 mg/kg
Application Route	: Oral
Exposure time	: 13 w
Number of exposures	: daily
Dose	: 0, 50, 250, 750 mg/kg
Method	: OECD Test Guideline 408
GLP	: yes

Aspiration toxicity

No data available

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks : Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****3-aminopropyldiethylamine:**

Toxicity to fish	: LC50 (Leuciscus idus (Golden orfe)): 146.6 mg/l
	End point: mortality
	Exposure time: 96 h
	Test Type: static test

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Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38412
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 30.16 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: ISO 6341

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 34 mg/l
Exposure time: 72 h
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

NOECr (Pseudokirchneriella subcapitata (green algae)): 19.53 mg/l
Exposure time: 72 h
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): 100.5 mg/l
Exposure time: 17 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38 412 Part 8
GLP: no

Persistence and degradability**Components:****3-aminopropyldiethylamine:**

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 32 mg/l
Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301A
GLP: yes

Bioaccumulative potential**Components:****3-aminopropyldiethylamine:**

Partition coefficient: n- : log Pow: 0.36 (77 °F / 25 °C)

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octanol/water

pH: 11.2 - 11.4

Method: OECD Test Guideline 107

GLP: no

Mobility in soil

No data available

Other adverse effects**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I
Substances
Remarks: This product neither contains, nor was
manufactured with a Class I or Class II ODS as defined by the
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +
B).

Additional ecological information : An environmental hazard cannot be excluded in the event of
unprofessional handling or disposal.
Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of contents and container in accordance with all local,
regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with
chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No.	: UN 2684
Proper shipping name	: 3-Diethylaminopropylamine
Class	: 3
Subsidiary risk	: 8
Packing group	: III
Labels	: Flammable Liquids, Corrosive
Packing instruction (cargo aircraft)	: 365
Packing instruction (passenger aircraft)	: 354

IMDG-Code

UN number	: UN 2684
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Proper shipping name : 3-DIETHYLAMINOPROPYLAMINE

Class	: 3
Subsidiary risk	: 8
Packing group	: III
Labels	: 3 (8)
EmS Code	: F-E, S-C
Marine pollutant	: no

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

Not applicable for product as supplied.

National Regulations**49 CFR**

UN/ID/NA number	: UN 2684
Proper shipping name	: 3-Diethylamino-propylamine

Class	: 3
Subsidiary risk	: 8
Packing group	: III
Labels	: FLAMMABLE LIQUID, CORROSIVE
ERG Code	: 132
Marine pollutant	: no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 311/312 Hazards	: Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Respiratory or skin sensitisation Skin corrosion or irritation Serious eye damage or eye irritation
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SARA 313	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
-----------------	---

This product does not contain any hazardous air pollutants (HAP) $\geq 0.1\%$, as defined by the U.S. Clean Air Act Section 112 (40 CFR 61

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

DSL	: All components of this product are on the Canadian DSL
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AIIC : On the inventory, or in compliance with the inventory
 NZIoC : Not in compliance with the inventory
 ENCS : On the inventory, or in compliance with the inventory
 KECI : On the inventory, or in compliance with the inventory
 PICCS : On the inventory, or in compliance with the inventory
 IECSC : On the inventory, or in compliance with the inventory
 TCSI : On the inventory, or in compliance with the inventory
 TSCA : All substances listed as active on the TSCA inventory

Inventories

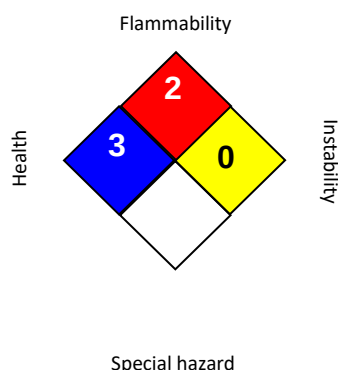
AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

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

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

SECTION 16. OTHER INFORMATION**Further information****NFPA 704:****HMIS® IV:**

HEALTH		3
FLAMMABILITY		2
PHYSICAL HAZARD		0

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

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