

**ARALDITE® LY 5052**

Version 1.0      Revision Date: 10/09/2015      SDS Number: 400001008763      Date of last issue: -  
Date of first issue: 10/09/2015

**SECTION 1. IDENTIFICATION**

Product name : ARALDITE® LY 5052

**Manufacturer or supplier's details**

Company name of supplier : Huntsman Advanced Materials Americas LLC  
Address : P.O. Box 4980  
The Woodlands,  
TX 77387  
United States of America  
Telephone : Non-Emergency: (800) 257-5547  
E-mail address of person responsible for the SDS : MSDS@huntsman.com  
Emergency telephone : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Epoxy resin solution

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Skin irritation : Category 2  
Serious eye damage : Category 1  
Skin sensitization : Category 1  
Acute aquatic toxicity : 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.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.

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

P273 Avoid release to the environment.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

**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.

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

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous ingredients**

Chemical Name	CAS-No.	Concentration (%)
Phenol, polymer with formaldehyde, glycidyl ether	28064-14-4	60 - 100
butanedioldiglycidyl ether	2425-79-8	30 - 60

**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 : 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.

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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 : 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 : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for 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.

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**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid formation of aerosol.  
Do not breathe 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.  
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.
- 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

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

Contains no substances with occupational exposure limit values.

**Hazardous components without workplace control parameters**

Ingredients	CAS-No.
Phenol, polymer with formaldehyde, glycidyl ether	28064-14-4
butanedioldiglycidyl ether	2425-79-8

**Personal protective equipment**

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

## Hand protection

Material : butyl-rubber  
Break through time : > 8 h

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Solvent-resistant gloves (butyl-rubber)  
Nitrile rubber  
10 - 480 min

Neoprene gloves

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

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

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

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

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid

Color : clear

Odor : slight

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

pH : ca. 7, Concentration: 500 g/l (20 °C)

Boiling point : > 200 °C

Flash point : > 140 °C  
Method: Pensky-Martens closed cup, closed cup

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

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

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

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

Vapor pressure : < 0.002 hPa (20 °C)

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

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

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Density	:	1.16 - 1.18 g/cm <sup>3</sup> (25 °C)
Solubility(ies)		
Water solubility	:	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	:	No data is available on the product itself.
Decomposition temperature	:	> 200 °C
Viscosity		
Viscosity, dynamic	:	1,000 - 1,500 mPa.s (25 °C)
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.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure	:	No data is available on the product itself.
<b>Acute toxicity</b>		
Acute oral toxicity - Product	:	Acute toxicity estimate : 3,326 mg/kg Method: Calculation method
Acute inhalation toxicity - Product	:	Acute toxicity estimate: 31.46 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity - Product	:	Acute toxicity estimate : 3,146 mg/kg Method: Calculation method
Acute toxicity (other routes of administration)	:	No data available



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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

**Ingredients:**

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:**

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 -  
 Assessment

: No data available

**IARC**

No ingredient of this product present at levels greater than or



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equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

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

**NTP**

No ingredient 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****Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 416

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

Reproductive toxicity - Assessment : No data available

**STOT-single exposure**

No data available

**STOT-repeated exposure**

No data available

**Repeated dose toxicity****Ingredients:**

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Phenol, polymer with formaldehyde, glycidyl ether:  
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

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

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**Neurological effects**

No data available

**Further information****Product:**

Remarks: No data available

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

Phenol, polymer with formaldehyde, glycidyl ether:

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

**Ingredients:**

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

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

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:

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

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

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

M-Factor (Acute aquatic  
 toxicity)

: No data available

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:  
 Toxicity to fish (Chronic  
 toxicity) : GLP: yes

**Ingredients:**

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

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:  
 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

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

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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****Ingredients:**

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

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

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

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**Bioaccumulative potential****Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:  
Bioaccumulation : Bioconcentration factor (BCF): 31  
Remarks: Does not bioaccumulate.

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:  
Partition coefficient: n- : log Pow: 3.242 (25 °C)  
octanol/water pH: 7.1  
Method: OECD Test Guideline 117

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

**Mobility in soil**

Mobility : No data available

**Ingredients:**

Phenol, polymer with formaldehyde, glycidyl ether:  
Distribution among : Koc: 445.  
environmental compartments  
butanedioldiglycidyl ether:  
Distribution among : Koc: 12.59. Method: OECD Test Guideline 121  
environmental compartments  
Stability in soil : No data available

**Other adverse effects**

Environmental fate and : No data available  
pathways

Results of PBT and vPvB : No data available  
assessment

Endocrine disrupting : No data available  
potential

Adsorbed organic bound : No data available  
halogens (AOX)

**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).

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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. (EPOXY PHENOL NOVOLAC 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. (EPOXY PHENOL NOVOLAC RESIN)

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Marine pollutant : yes

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

Not applicable for product as supplied.

**Domestic regulation****DOT Classification**

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(EPOXY PHENOL NOVOLAC RESIN)

**SECTION 15. REGULATORY INFORMATION**

**TSCA - 5(a) Significant New Use Rule List of Chemicals** : Not relevant

**EPCRA - Emergency Planning and Community Right-to-Know**

**SARA 311/312 Hazards** : No SARA Hazards

**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.

**Clean Air Act**

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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**Pennsylvania Right To Know**

Phenol, polymer with formaldehyde, glycidyl ether	28064-14-4	50 - 70 %
butanedioldiglycidyl ether	2425-79-8	30 - 50 %

**California Prop 65**

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

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

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	: On the inventory, or in compliance with the inventory



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

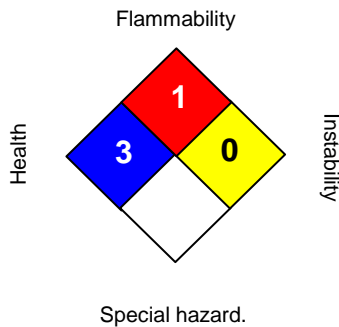
**Inventories**

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**

**NFPA:**



**HMIS III:**

<b>HEALTH</b>	<b>3</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 =Slight,  
 2 = Moderate, 3 = High  
 4 = Extreme, \* = Chronic

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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.

**NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR**

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# SAFETY DATA SHEET

## ARADUR® 5052 CH

### Section 1. Identification

**GHS product identifier** : ARADUR® 5052 CH  
**Product code** : 00051022  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Material uses** : Formulated hardener for structural composites  
**Supplier's details** : Huntsman Advanced Materials Americas LLC  
P.O. Box 4980  
The Woodlands, TX 77387  
  
Non-Emergency phone: (800) 257-5547  
  
**e-mail address of person responsible for this SDS** : MSDS@huntsman.com  
  
**Emergency telephone number (24h/7day)** : Chemtrec: (800) 424-9300 or (703) 527-3887

### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : ACUTE TOXICITY: ORAL - Category 4  
ACUTE TOXICITY: SKIN - Category 3  
ACUTE TOXICITY: INHALATION - Category 3  
SKIN CORROSION/IRRITATION - Category 1B  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
SKIN SENSITIZATION - Category 1  
TOXIC TO REPRODUCTION [Fertility] - Category 1B  
TOXIC TO REPRODUCTION [Unborn child] - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [brain] - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 2

#### GHS label elements

##### Hazard pictograms



**Signal word** : Danger

**Hazard statements** :

## Section 2. Hazards identification

Toxic in contact with skin or if inhaled.  
 Harmful if swallowed.  
 Causes severe skin burns and eye damage.  
 May cause an allergic skin reaction.  
 May damage fertility or the unborn child.  
 May cause damage to organs through prolonged or repeated exposure if swallowed.  
 (brain)  
 Toxic to aquatic life with long lasting effects.

**Precautionary statements** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. If skin irritation or rash occurs: Get medical attention. 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 physician. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	%	CAS number
Cycloaliphatic polyamine	30 - 60	6864-37-5
Isophorone diamine	30 - 60	2855-13-2
2,4,6-tris(dimethylaminomethyl)phenol	1 - 3	90-72-2
Salicylic acid	1 - 3	69-72-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

**Inhalation** :

## Section 4. First aid measures

Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

### Skin contact

: Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

### Ingestion

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

## Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 blistering may occur  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 stomach pains  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

- Flash point** : Closed cup: >110°C (>230°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
- Extinguishing media**
- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 nitrogen oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

- Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental



## Section 7. Handling and storage

contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Hand protection** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Thermal hazards** : Not available.



## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Clear.
<b>Odor</b>	: Slight
<b>Odor threshold</b>	: Not available.
<b>pH</b>	: 11 to 12 [Conc. (% w/w): 50%]
<b>Melting point/Freezing point</b>	: Not available.
<b>Boiling/condensation point</b>	: 135°C (275°F)
<b>Flash point</b>	: Closed cup: >110°C (>230°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: <0.0012 kPa (<0.009 mm Hg) [room temperature]
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: Not available.
<b>Solubility in water</b>	: partially soluble
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: >200°C (>392°F)
<b>Density</b>	: 0.93 to 0.95 g/cm <sup>3</sup> [25°C (77°F)]
<b>Viscosity</b>	: Dynamic (room temperature): 40 to 60 mPa·s (40 to 60 cP)

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: acids
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
Cycloaliphatic polyamine	OECD 403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat	0.42 mg/l
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	200 to 400 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat	320 to 460 mg/kg
Isophorone diamine	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male	1030 mg/kg
2,4,6-tris (dimethylaminomethyl) phenol	Unknown guidelines	LD50 Dermal	Rat - Male	>971 mg/kg
Salicylic acid	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	2169 mg/kg
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat - Male, Female	>2000 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat	891 mg/kg

#### Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Cycloaliphatic polyamine	-	Rabbit	Eyes - Corrosive
Isophorone diamine	-	Rabbit	Skin - Corrosive
	-	Rabbit	Skin - Corrosive
2,4,6-tris(dimethylaminomethyl) phenol	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Corrosive
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Corrosive
Salicylic acid	EPA CFR	Rabbit	Eyes - Corrosive
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Non-irritant.
	-	Rabbit	Eyes - Severe irritant

#### Conclusion/Summary

**Skin** : Cycloaliphatic polyamine Corrosive to the skin.  
 Isophorone diamine Corrosive to the skin.  
 2,4,6-tris (dimethylaminomethyl) phenol Corrosive to the skin.  
 Salicylic acid Non-irritating to the skin.

**Eyes** : Cycloaliphatic polyamine Corrosive to eyes.  
 Isophorone diamine Corrosive to eyes.  
 2,4,6-tris (dimethylaminomethyl) phenol Corrosive to eyes.  
 Salicylic acid Severely irritating to eyes.

**Respiratory** :

## Section 11. Toxicological information

Cycloaliphatic polyamine	No additional information.
Isophorone diamine	No additional information.
2,4,6-tris (dimethylaminomethyl) phenol	No additional information.
Salicylic acid	No additional information.

### Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
Cycloaliphatic polyamine	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Isophorone diamine	OECD 406 Skin Sensitization	skin	Guinea pig	Sensitizing
2,4,6-tris (dimethylaminomethyl) phenol	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Salicylic acid	OECD 429 Skin Sensitization: Local Lymph Node Assay	skin	Mouse	Not sensitizing

### Mutagenicity

Product/ingredient name	Test	Result
Cycloaliphatic polyamine	Experiment: In vitro Subject: Bacteria Cell: Somatic Metabolic activation: +/-	Negative
2,4,6-tris (dimethylaminomethyl)phenol	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: +/-	Negative

### Conclusion/Summary :

Isophorone diamine	Not mutagenic in a standard battery of genetic toxicological tests.
2,4,6-tris (dimethylaminomethyl) phenol	Not mutagenic in a standard battery of genetic toxicological tests.
Salicylic acid	Not mutagenic in a standard battery of genetic toxicological tests.

### Carcinogenicity

## Section 11. Toxicological information

Product/ingredient name	Test	Species	Dose	Exposure	Result/Result type
Salicylic acid	-	Rat - Male, Female	500 mg/kg	2 years; 7 days per week	Negative - Oral - NOAEL

### Reproductive toxicity

Product/ingredient name	Test	Species	Maternal toxicity	Fertility	Developmental effects
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	Negative	Negative	Negative
Salicylic acid	OECD 416 Two- Generation Reproduction Toxicity Study	Rat - Male, Female	Negative	Negative	Negative

### Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Cycloaliphatic polyamine	OECD 414 Prenatal Developmental Toxicity Study	Rat	Negative - Oral
Isophorone diamine	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	Negative - Oral
Salicylic acid	-	Rat	Positive - Oral

### Conclusion/Summary :

Salicylic acid

No known significant effects or critical hazards.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,4,6-tris(dimethylaminomethyl)phenol	Category 2	Oral	brain

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye damage.

## Section 11. Toxicological information

- Inhalation** : Toxic if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Cycloaliphatic polyamine	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	2.5 mg/kg
	OECD 413 Subchronic Inhalation Toxicity: 90-day Study	Sub-chronic NOEC Inhalation Vapor	Rat - Male, Female	12 mg/m <sup>3</sup>
Isophorone diamine	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	60 mg/kg

## Section 11. Toxicological information

2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Sub-acute NOEL Oral	Rat - Male, Female	15 mg/kg
Salicylic acid	-	Chronic LOAEL Oral	Dog - Male, Female	150 mg/kg/d
	-	Chronic LOAEL Oral	Rat - Male, Female	250 mg/kg
	OECD 412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study	Sub-acute NOEC Inhalation Vapor	Rat - Female	700 mg/m <sup>3</sup>

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : May damage the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : May damage fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	658.4 mg/kg
Dermal	455.2 mg/kg
Inhalation (dusts and mists)	0.7637 mg/l

**Other information** : Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Cycloaliphatic polyamine	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hours Static	Algae	>5 mg/l
	DIN DIN 38412 Part 8	Acute EC50	17 hours Static	Bacteria	96 mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	48 hours	Daphnia	4.6 mg/l
	DIN DIN 38412 Part 15	Acute LC50	96 hours Static	Fish	31.6 mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic LOAEL	72 hours Static	Algae	1.25 mg/l
Isophorone diamine	-	Chronic NOEC	21 days	Daphnia	4 mg/l
	Measured	Acute EC10	18 hours	Bacteria	1120 mg/l
	EU EC C.3 Algal	Acute EC50	72 hours	Algae	37 mg/l

## Section 12. Ecological information

2,4,6-tris (dimethylaminomethyl)phenol	Inhibition Test OECD 202 <i>Daphnia</i> sp. Acute	Acute	EC50	Static 48 hours Static	Daphnia	23	mg/l
	Immobilisation Test EU EC C.1 Acute Toxicity for Fish	Acute	LC50	96 hours Semi-static	Fish	110	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Static	Algae	84	mg/l
	Unknown guidelines	Acute	LC50	96 hours Static	Daphnia	718	mg/l
Salicylic acid	-	Acute	LC50	96 hours Static	Fish	175	mg/l
	-	Chronic Acute	NOEC EC50	72 hours 72 hours	Algae Algae	6.25 >100	mg/l mg/l
	OECD 201 Alga, Growth Inhibition Test ISO	Acute	EC50	16 hours Static	Bacteria	380	mg/l
	OECD 202 <i>Daphnia</i> sp. Acute	Acute	EC50	48 hours Static	Daphnia	870	mg/l
	Immobilisation Test OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Flow- through	Fish	1370	mg/l
	OECD OECD 202: Part II ( <i>Daphnia</i> sp., Reproduction Test	Chronic	NOEC	21 days	Daphnia	10	mg/l

**Conclusion/Summary** : Salicylic acid Not toxic or harmful to aquatic organisms.

### Persistence and degradability

Product/ingredient name	Test	Period	Result
Cycloaliphatic polyamine	OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	28 days	<1 %
Isophorone diamine	EU EC C.4-A Biodegradation: Determination of the "Ready" Biodegradability: Dissolved Organic Carbon (DOC) Die-Away Test	28 days	8 %
2,4,6-tris (dimethylaminomethyl)phenol	OECD 301D Ready Biodegradability - Closed Bottle Test	28 days	4 %
Salicylic acid	OECD 301C Ready Biodegradability - Modified MITI Test (I)	14 days	88.1 %

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Cycloaliphatic polyamine	-	-	Not readily
Isophorone diamine	-	-	Not readily
2,4,6-tris (dimethylaminomethyl)phenol	-	-	Not readily
Salicylic acid	-	-	Readily

### Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Cycloaliphatic polyamine	2.3	<60	low
Isophorone diamine	0.99	-	low
2,4,6-tris (dimethylaminomethyl)phenol	0.219	-	low
Salicylic acid	2.25	-	low

### Mobility in soil

Not available.

**Other adverse effects** : No known significant effects or critical hazards.

### Other ecological information

**BOD5** : Not determined.

**COD** : Not determined.

**TOC** : Not determined.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

## Section 14. Transport information

### Proper shipping name

**DOT** : Corrosive liquid, toxic, n.o.s. (CYCLOALIPHATIC POLYAMINE, ISOPHORONE DIAMINE) Marine pollutant










**TDG** : Corrosive liquid, toxic, n.o.s. (CYCLOALIPHATIC POLYAMINE, ISOPHORONE DIAMINE) Marine pollutant

**IMDG** : Corrosive liquid, toxic, n.o.s. (Cycloaliphatic polyamine, Isophorone diamine) Marine pollutant

**IATA** : Corrosive liquid, toxic, n.o.s. (Cycloaliphatic polyamine, Isophorone diamine)



## Section 14. Transport information

Regulatory information	UN number	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN2922	8 (6.1)	II	 	-
<b>TDG Classification</b>	UN2922	8 (6.1)	II	 	-
<b>IMDG Classification</b>	UN2922	8 (6.1)	II	  	<b>Emergency schedules (EmS)</b> F-A, S-B
<b>IATA Classification</b>	UN2922	8 (6.1)	II	 	<b>Passenger and Cargo Aircraft</b> Quantity limitation: 1 L Packaging instructions: 851 <b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855

PG\* : Packing group

## Section 15. Regulatory information

### Safety, health and environmental regulations specific for the product

#### United States Regulations

**TSCA 8(b) inventory** : All components are listed or exempted.

**TSCA 5(a)2 final significant new use rule (SNUR)** : No ingredients listed.

## Section 15. Regulatory information

- TSCA 5(e) substance consent order** : No ingredients listed.
- TSCA 12(b) export notification** : No ingredients listed.
- SARA 311/312** : Immediate (acute) health hazard  
Delayed (chronic) health hazard
- Clean Air Act - Ozone Depleting Substances (ODS)** : This product does not contain nor is it manufactured with ozone depleting substances.
- SARA 313** : No ingredients listed.
- CERCLA Hazardous substances** : No ingredients listed.

### State regulations

- PENNSYLVANIA - RTK** : No ingredients listed.
- California Prop 65** : **WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>
4,4'-methylenedi-<o>-toluidine	Yes.	No.

### Canadian regulations

- CEPA DSL** : All components are listed or exempted.
- WHMIS Classes** : Class D-1B: Material causing immediate and serious toxic effects (Toxic).  
Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).  
Class E: Corrosive material

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

### Brazil Regulations

- Classification system used** : Norma ABNT-NBR 14725-2:2012

### International lists

- Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** All components are listed or exempted.  
**Japan inventory:** All components are listed or exempted.  
**Korea inventory:** All components are listed or exempted.  
**Malaysia Inventory (EHS Register):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.  
**Philippines inventory (PICCS):** All components are listed or exempted.  
**Taiwan inventory (CSNN):** Not determined.

## Section 16. Other information

**Hazardous Material  
Information System (U.S.A.)** :

Health	*	3
Flammability		1
Physical hazards		0
Personal protection		

**The customer is responsible for determining the PPE code for this material.**

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**National Fire Protection  
Association (U.S.A.)** :



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▣ Indicates information that has changed from previously issued version.

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**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.**

## Section 16. Other information

*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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