

ARALDITE® 2021-1 A

Version 1.0 Revision Date: 10/22/2015 SDS Number: 400001013351 Date of last issue: -
Date of first issue: 10/22/2015

SECTION 1. IDENTIFICATION

Product name : ARALDITE® 2021-1 A

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 : Adhesives

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 2
Skin corrosion : Category 1A
Serious eye damage : Category 1
Skin sensitization : Category 1
Carcinogenicity : Category 1A
Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)
Acute aquatic toxicity : Category 3
Chronic aquatic toxicity : Category 3

GHS Label element

Hazard pictograms :



Signal Word : Danger

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- Hazard Statements : H225 Highly flammable liquid and vapour.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.
- Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
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 dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

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Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity:
25.265 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
methyl methacrylate	80-62-6	30 - 60
methacrylic acid	79-41-4	7 - 13
Butylated hydroxytoluene	128-37-0	1 - 3
Silicon, amorphous	112945-52-5	1 - 3
Talc (Mg ₃ H ₂ (SiO ₃) ₄)	14807-96-6	0.1 - 1
alpha,alpha-dimethylbenzyl hydroperoxide	80-15-9	0.1 - 1

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
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 : Move to fresh air.
Consult a physician after significant exposure.

If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.

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Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.

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

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

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.

Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

No data is available on the product itself.

Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

No data is available on the product itself.

High volume water jet

No data is available on the product itself.

Specific hazards during fire : Do not use a solid water stream as it may scatter and spread

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- fighting : fire.
- 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.
- No data is available on the product itself.
- Specific extinguishing methods : No data is available on the product itself.
- No data is available on the product itself.
- Further information : Use water spray to cool unopened containers. 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.
- 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 fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- 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. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors 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.

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 : 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).

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 : Avoid formation of aerosol. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

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 vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : For personal protection see section 8. Persons with a history of 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. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Container may be opened only under exhaust ventilation hood. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.

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.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
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

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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 : No smoking.
Store in cool place.
Keep in a 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.

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.
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Reducing agents

Strong oxidizing agents

Heavy metal salts

Recommended storage temperature : 2 - 8 °C

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

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
methyl methacrylate	80-62-6	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	100 ppm 410 mg/m ³	NIOSH REL
		TWA	100 ppm 410 mg/m ³	OSHA Z-1
		TWA	100 ppm 410 mg/m ³	OSHA PEL
methacrylic acid	79-41-4	TWA	20 ppm	ACGIH
		TWA	20 ppm 70 mg/m ³	NIOSH REL
		TWA	20 ppm 70 mg/m ³	OSHA PEL
Butylated hydroxytoluene	128-37-0	TWA (Inhalable)	2 mg/m ³	ACGIH

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		fraction and vapor)		
		TWA	10 mg/m3	OSHA PEL
Silicon, amorphous	112945-52-5	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	OSHA Z-3

Hazardous components without workplace control parameters

Ingredients	CAS-No.
Talc (Mg3H2(SiO3)4)	14807-96-6
alpha,alpha-dimethylbenzyl hydroperoxide	80-15-9

Personal protective equipment

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

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

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

Remarks : Solvent-resistant gloves
 The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.
 Before removing gloves clean them with soap and water.
 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.
 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.
 impervious clothing
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.
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 : paste

Color : white

Odor : like acrylic

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

pH : No data is available on the product itself.

Boiling point : > 100 °C

Flash point : 10 °C
Method: closed cup

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

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

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

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

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

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

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

Density : No data is available on the product itself.

Solubility(ies)

Water solubility : insoluble

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

Partition coefficient: n-octanol/water : No data is available on the product itself.

Autoignition temperature : No data is available on the product itself.

Thermal decomposition : No data is available on the product itself.

Viscosity

Viscosity, dynamic : 30,000 mPa.s (25 °C)
thixotropic

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Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.
No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.
No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No decomposition if used as directed.

Vapors may form explosive mixture with air.

No decomposition if stored and applied as directed.

Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Heat, flames and sparks.

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.

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: > 40 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

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

Skin corrosion/irritation**Product:**

Remarks: Extremely corrosive and destructive to tissue.

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Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitization**Product:**

Remarks: Causes sensitization.

Assessment: No data available

Germ cell mutagenicity**Ingredients:**

methacrylic acid:

Genotoxicity in vitro : Concentration: 33 - 4000 ug/plate
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Butylated hydroxytoluene:

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

Metabolic activation: Metabolic activation
 Result: negative

Concentration: 100 - 1000 ug/plate
 Metabolic activation: with and without metabolic activation
 Result: negative

Silicon, amorphous:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative

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

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

Ingredients:

methacrylic acid:

Genotoxicity in vivo : Cell type: Somatic
 Application Route: Inhalation
 Exposure time: 2 h
 Dose: 100 - 1000 ppm
 Method: OECD Test Guideline 475
 Result: Not classified due to inconclusive data.
 GLP: no

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Application Route: Inhalation
Exposure time: 6 h
Dose: 100 - 9000 ppm
Method: OECD Test Guideline 478
Result: negative
GLP: no

Butylated hydroxytoluene:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 75 mg/kg
Result: negative

Application Route: Oral
Exposure time: 9 Months
Dose: ca 750 mg/kg
Result: negative

Silicon, amorphous:
Genotoxicity in vivo : Application Route: Inhalation
Dose: 50 mg/m³
Result: negative

Carcinogenicity**Ingredients:**

methacrylic acid:
Species: Rat, (male and female)
Application Route: Inhalation
Exposure time: 24 month(s)
Dose: 250 - 1000 ppm
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: negative

Species: Rat, (male and female)
Application Route: Oral
Exposure time: 24 month(s)
Dose: 12 - 3300 ppm
Frequency of Treatment: 7 daily
Result: negative

Butylated hydroxytoluene:
Species: Rat, (male and female)
Application Route: Oral
Result: negative
Target Organs: Liver

Silicon, amorphous:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Dose: 1800 - 3200 mg/kg
Frequency of Treatment: 7 daily
Method: OECD Test Guideline 453
Result: negative

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Carcinogenicity - Assessment : No data available

IARC No ingredient 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 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 Known to be human carcinogen

Talc (Mg₃H₂(SiO₃)₄)

Reproductive toxicity**Ingredients:**

Butylated hydroxytoluene:
Effects on fertility : Species: Rat, male and female
Application Route: Oral

Ingredients:

Butylated hydroxytoluene:
Effects on fetal development :
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 100 mg/kg body weight
Result: No teratogenic effects.

Silicon, amorphous:

Species: Mouse
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,340 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,600 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,350 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Reproductive toxicity - : No data available

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Assessment

STOT-single exposure**Ingredients:**

methyl methacrylate:
Routes of exposure: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT-repeated exposure

No data available

Repeated dose toxicity**Ingredients:**

methacrylic acid:
Species: Rat, male and female
NOEC: 500 ppm
Test atmosphere: vapor
Exposure time: 2 yr
Number of exposures: 5 d
Method: OECD Test Guideline 453

Butylated hydroxytoluene:
Species: Rat, male and female
NOAEL (No observed adverse effect level): 25 mg/kg/d
Application Route: Ingestion
Method: Chronic toxicity

Silicon, amorphous:
Species: Rat, male and female
NOAEL (No observed adverse effect level): 7950 - 8980 mg/kg
Application Route: Ingestion
Exposure time: 4,320 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOEC: 4000 - 4500 mg/m³
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 13 Weeks
Number of exposures: 7 d
Method: OECD Test Guideline 413

Repeated dose toxicity - : No data available
Assessment

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Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: Solvents may degrease the skin.

Remarks: Solvents may degrease the skin.

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

methyl methacrylate:

Toxicity to fish : LC50: 191 mg/l
Exposure time: 96 h

methacrylic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 85 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water
Method: Fish Acute Toxicity Test
GLP: yes
Remarks: Toxic to aquatic organisms.

Silicon, amorphous:

Toxicity to fish : LL50 (Brachydanio rerio (zebrafish)): > 10,000 mg/l
Exposure time: 96 h

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

Talc (Mg₃H₂(SiO₃)₄):
 Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l
 Exposure time: 24 h

Ingredients:

methyl methacrylate:
 Toxicity to daphnia and other : EC50: 69 mg/l
 aquatic invertebrates Exposure time: 48 h

methacrylic acid:
 Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 130 mg/l
 aquatic invertebrates Exposure time: 48 h
 Test Type: flow-through test
 Test substance: Fresh water
 Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater
 Daphnids
 GLP: yes

Butylated hydroxytoluene:
 Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.61 mg/l
 aquatic invertebrates Exposure time: 48 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Silicon, amorphous:
 Toxicity to daphnia and other : EL50 (Daphnia magna (Water flea)): >= 1,000 mg/l
 aquatic invertebrates Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Ingredients:

methyl methacrylate:
 Toxicity to algae : IC50: > 110 mg/l
 Exposure time: 72 h

methacrylic acid:
 Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 45 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

Butylated hydroxytoluene:
 Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus
 subspicatus)): > 0.4 mg/l
 Exposure time: 72 h
 Test Type: static test
 Method: Directive 67/548/EEC, Annex V, C.3.

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Silicon, amorphous:
Toxicity to algae : EL50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 10,000 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Ingredients:

Butylated hydroxytoluene:
M-Factor (Acute aquatic toxicity) : 1

Ingredients:

methacrylic acid:
Toxicity to fish (Chronic toxicity) : GLP: yes
NOEC (Brachydanio rerio (zebrafish)): 10 mg/l
Exposure time: 35 d
Test Type: flow-through test
Test substance: Fresh water
Method: OECD Test Guideline 210
GLP: yes

Butylated hydroxytoluene:
Toxicity to fish (Chronic toxicity) : LC0 (Brachydanio rerio (zebrafish)): >= 0.57 mg/l
Exposure time: 96 hrs
Test Type: semi-static test
Method: Directive 67/548/EEC, Annex V, C.1.

Ingredients:

methacrylic acid:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 53 mg/l
Exposure time: 21 d
Test Type: flow-through test
Test substance: Fresh water
Method: OECD Test Guideline 211

Butylated hydroxytoluene:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.32 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 202

EC0 (Daphnia magna (Water flea)): >= 0.31 mg/l
Exposure time: 48 hrs
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.2.

NOEC (Daphnia magna (Water flea)): 0.23 mg/l
Exposure time: 48 hrs
Test Type: static test
Method: OECD Test Guideline 202

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NOEC (Daphnia magna (Water flea)): 0.316 mg/l
 Exposure time: 21 d
 Test Type: semi-static test
 Method: OECD Test Guideline 202

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

Ingredients:

methacrylic acid:
 Toxicity to bacteria : EC50 (Pseudomonas putida): 270 mg/l
 Exposure time: 17 h
 Test Type: static test
 Test substance: Fresh water
 Method: DIN 38 412 Part 8
 GLP: yes

Butylated hydroxytoluene:
 Toxicity to bacteria : IC50 (activated sludge): > 500 mg/l
 Exposure time: 0.5 h
 Method: Directive 67/548/EEC, Annex V, C.11.

: EC50 (activated sludge): > 10,000 mg/l
 Exposure time: 3 h
 Test Type: static test
 Method: Directive 67/548/EEC, Annex V, B.15.

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
 Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 25.265 %

Persistence and degradability**Ingredients:**

methyl methacrylate:

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Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

methacrylic acid:
Biodegradability : Inoculum: activated sludge
Concentration: 3 mg/l
Result: Readily biodegradable.
Biodegradation: 86 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Butylated hydroxytoluene:
Biodegradability : Inoculum: activated sludge
Result: Inherently biodegradable.
Biodegradation: 5.2 %
Exposure time: 112 d

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

Ingredients:

methacrylic acid:
Photodegradation : Test Type: Air

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Ingredients:**

methyl methacrylate:
Bioaccumulation : Bioconcentration factor (BCF): 3

Butylated hydroxytoluene:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 330 - 1,800

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Exposure time: 28 d
Method: flow-through test

Ingredients:

methyl methacrylate:
Partition coefficient: n-octanol/water : log Pow: 1.38

methacrylic acid:
Partition coefficient: n-octanol/water : log Pow: 0.93 (22 °C)
pH: 2.2

Butylated hydroxytoluene:
Partition coefficient: n-octanol/water : log Pow: 5.1

Mobility in soil

Mobility : No data available

Ingredients:

Butylated hydroxytoluene:
Distribution among environmental compartments : Koc: 8183.
Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : 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. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Offer surplus and non-recyclable solutions to a licensed disposal company.

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.
Do not burn, or use a cutting torch on, the empty drum.

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 Regulation****IATA**

UN/ID No.	: UN 2924
Proper shipping name	: Flammable liquid, corrosive, n.o.s. (METHACRYLIC ACID, METHYL METHACRYLATE)
Class	: 3
Subsidiary risk	: 8
Packing group	: II
Labels	: Flammable Liquids, Corrosive
Packing instruction (cargo aircraft)	: 363
Packing instruction (passenger aircraft)	: 352

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IMDG

UN number	: UN 2924
Proper shipping name	: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (METHACRYLIC ACID, METHYL METHACRYLATE)
Class	: 3
Subsidiary risk	: 8
Packing group	: II
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.

Domestic regulation**DOT Classification**

UN/ID/NA number	: UN 2924
Proper shipping name	: FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (METHACRYLIC ACID, METHYL METHACRYLATE)
Class	: 3
Subsidiary risk	: 8
Packing group	: II
Labels	: FLAMMABLE LIQUID, CORROSIVE
ERG Code	: 132
Marine pollutant	: no

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 : Fire Hazard
Chronic Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

methyl methacrylate	80-62-6	58.5426 %
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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).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

methyl methacrylate	80-62-6	58.5426 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

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Pennsylvania Right To Know

methyl methacrylate	80-62-6	50 - 70 %
Ethene, homopolymer, chlorinated, chlorosulfonated	68037-39-8	20 - 30 %
methacrylic acid	79-41-4	5 - 10 %
2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate	25852-37-3	1 - 5 %

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

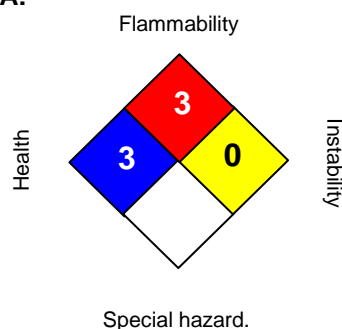
1,1,2-trichloroethane	79-00-5
cumene	98-82-8

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
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:**

HEALTH	3*
FLAMMABILITY	3
PHYSICAL HAZARD	0

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.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.

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SECTION 1. IDENTIFICATION

Product name : ARALDITE® 2021-1 B

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 : Adhesives and/or sealants

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 2
Skin irritation : Category 2
Skin sensitization : Category 1
Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)
Acute aquatic toxicity : Category 3

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H402 Harmful to aquatic life.

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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 dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 21.5 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
methyl methacrylate	80-62-6	60 - 100
3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine	34562-31-7	3 - 7

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.

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- Show this material safety data sheet to the doctor in attendance.
- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. 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. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.
- Most important symptoms and effects, both acute and delayed : None known.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : No data is available on the product itself.
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.

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.

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. For safety reasons in case of fire, cans should be stored

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separately in closed containments.
Use a water spray to cool fully closed containers.

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.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Beware of vapors accumulating to form explosive concentrations. Vapors 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 respective authorities.

Methods and materials for containment and cleaning up : 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 : Avoid formation of aerosol. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

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 vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

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.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
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.

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- Conditions for safe storage : No smoking.
Store in cool place.
Keep in a 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 oxidizing agents

Strong acids

Strong bases
- Recommended storage temperature : 2 - 8 °C

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

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
methyl methacrylate	80-62-6	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	100 ppm 410 mg/m ³	NIOSH REL
		TWA	100 ppm 410 mg/m ³	OSHA Z-1
		TWA	100 ppm 410 mg/m ³	OSHA PEL

Personal protective equipment

- Respiratory protection : In the case of vapor formation use a respirator with an approved filter.
- Hand protection
Remarks : Solvent-resistant gloves
The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.
Before removing gloves clean them with soap and water.
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.
- 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.

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When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: paste
Color	: light yellow
Odor	: like acrylic
Odor Threshold	: No data is available on the product itself.
pH	: No data is available on the product itself.
Boiling point	: > 100 °C
Flash point	: 10 °C Method: closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Upper explosion limit	: No data is available on the product itself.
Lower explosion limit	: No data is available on the product itself.
Vapor pressure	: No data is available on the product itself.
Relative vapor density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 0.95 g/cm ³
Solubility(ies)	
Water solubility	: insoluble
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Autoignition temperature	: No data is available on the product itself.
Thermal decomposition	: No data is available on the product itself.
Viscosity	
Viscosity, dynamic	: 15,000 - 20,000 mPa.s (25 °C) thixotropic
Self-Accelerating decomposition temperature (SADT)	: No data is available on the product itself.

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SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions : Stable under recommended storage conditions.
No decomposition if used as directed.
Conditions to avoid : Heat, flames and sparks.
Hazardous decomposition products : Burning produces obnoxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Ingredients:

methyl methacrylate:
Acute inhalation toxicity : LC50 (Rat, male and female): 29.8 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Directive 67/548/EEC, Annex V, B.2.

Ingredients:

methyl methacrylate:
Acute dermal toxicity : LD50 (Rabbit, male): > 5,000 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation**Product:**

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation**Product:**

Remarks: Vapors may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitization**Product:**

Remarks: Causes sensitization.

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Assessment: No data available

Germ cell mutagenicity

Genotoxicity in vitro : No data available

Genotoxicity in vivo : No data available

Carcinogenicity

No data available

Carcinogenicity - Assessment : No data available

IARC

No ingredient 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 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

Effects on fertility : No data available

Effects on fetal development : No data available

Reproductive toxicity - Assessment : No data available

STOT-single exposure**Ingredients:**

methyl methacrylate:

Routes of exposure: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT-repeated exposure

No data available

Repeated dose toxicity

No data available

Repeated dose toxicity - Assessment : No data available

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Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: Solvents may degrease the skin.

Remarks: Solvents may degrease the skin.

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

methyl methacrylate:
Toxicity to fish : LC50: 191 mg/l
Exposure time: 96 h

Ingredients:

methyl methacrylate:
Toxicity to daphnia and other : EC50: 69 mg/l
aquatic invertebrates Exposure time: 48 h

Ingredients:

methyl methacrylate:
Toxicity to algae : IC50: > 110 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic) : No data available

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toxicity)

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

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

Toxicity to bacteria : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 21.5 %

Persistence and degradability**Ingredients:**

methyl methacrylate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

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BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Ingredients:**

methyl methacrylate:
Bioaccumulation : Bioconcentration factor (BCF): 3

Ingredients:

methyl methacrylate:
Partition coefficient: n-octanol/water : log Pow: 1.38

Mobility in soil

Mobility : No data available

Distribution among environmental compartments : No data available

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : 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

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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. Harmful to aquatic life.

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.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION**International Regulation****IATA**

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.
(METHYL METHACRYLATE)
Class : 3
Packing group : II
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353

IMDG

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(METHYL METHACRYLATE)
Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

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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 1993
Proper shipping name	: FLAMMABLE LIQUIDS, N.O.S. (METHYL METHACRYLATE)
Class	: 3
Packing group	: II
Labels	: FLAMMABLE LIQUID
ERG Code	: 128
Marine pollutant	: no

SECTION 15. REGULATORY INFORMATION

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

EPCRA - Emergency Planning and Community Right-to-Know**CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
METHYL METHACRYLATE	80-62-6	1000	1409

SARA 311/312 Hazards : Fire Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

methyl methacrylate	80-62-6	70.95 %
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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).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

methyl methacrylate	80-62-6	70.95 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCOMI Intermediate or Final VOC's (40 CFR 60.489).

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.

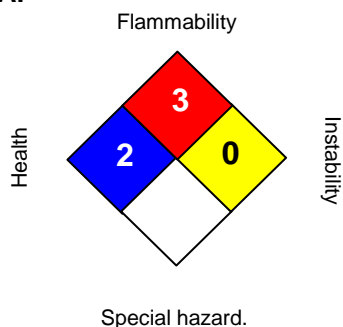
The ingredients of this product are reported in the following inventories:

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

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

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, * = Chronic

Revision Date : 12/23/2015

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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

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