



Safety Data Sheet

Version 7.1
Revision Date: 18/01/2021

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **Deuterated acrylic acid-d₄**
Product number: D4AA
Product use: For laboratory research purposes.
Supplier / Manufacturer: Polymer Source, Inc.
Address: 124 Avro street, Dorval (Montreal), Quebec H9P 2X8, Canada
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2. HAZARDS IDENTIFICATION

Emergency overview: Target organs: Liver, kidney, blood, eyes.
Other hazards which do not result in classification:
Rapidly absorbed through skin.

WHMIS classification: B3. Combustible liquid.
D1B. Toxic material causing immediate and serious toxic effects: Toxic by ingestion.
D2A. Very toxic material causing other toxic effects:
Toxic by skin absorption.
D2B. Toxic material causing other toxic effects: Carcinogen.
E. Corrosive material: Skin sensitizer; Mutagen; Corrosive to metals; Corrosive to skin; Corrosive.

GHS classification: Flammable liquids (Category 3)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Skin sensitisation (Category 1)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 2)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements:

Pictogram:



	Signal word:	Danger
	Hazard statements:	H226. Flammable liquid and vapour. H301 + H311. Toxic if swallowed or in contact with skin. H314. Causes severe skin burns and eye damage. H317. May cause an allergic skin reaction. H331. Toxic if inhaled. H341. Suspected of causing genetic defects. H351. Suspected of causing cancer. H400. Very toxic to aquatic life.
	Precautionary statements:	P261. Avoid breathing dust, fume, gas, mist, vapours, spray. P273. Avoid release to the environment. P280. Wear protective gloves, protective clothing, eye protection, face protection. P305 + P351 + P338. <i>If in eyes:</i> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310. Immediately call a Poison Center or doctor/ physician.
HMIS classification:	Health hazard:	3
	Chronic health hazard:	*
	Flammability:	2
	Physical hazards:	0
Potential health effects:	Inhalation:	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
	Skin:	Toxic if absorbed through skin. Causes skin burns.
	Eyes:	Causes eye burns. Causes severe eye burns.
	Ingestion:	Toxic if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Formula:	Acrylic acid-d ₄ :	C ₃ D ₄ O ₂
Concentration:	99 %	
CAS registry number:	Acrylic acid-d ₄ :	285138-82-1
Stabilizer:	Hydroquinone (CAS # 123-31-9)	1 %

4. FIRST AID MEASURES

General advice:	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability:	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat, sparks, open flame, hot surface. No smoking.
Suitable extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters:	Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products:	Hazardous decomposition products formed under fire conditions: Carbon oxides.
Explosion data:	Sensitivity to mechanical impact: no data available Sensitivity to static discharge: no data available
Further information:	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up:	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling:	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
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. Store under inert gas. Hygroscopic.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters:

<i>Components</i>	<i>Value</i>	<i>Control parameters</i>	<i>Basis</i>	<i>Remarks</i>
Acrylic acid-d4 (CAS-No.: 285138-82-1)	TWA	2.000000 ppm 5.900000 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required. Substance may be readily absorbed through intact skin.
	TWA	2.000000 ppm	Canada. British Columbia OEL	Adverse reproductive effect. Contributes significantly to the overall exposure by the skin route.
	TWAEV	2.000000 ppm	Canada. Ontario OELs	
	TWAEV	2.000000 ppm 5.900000 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants	Skin (percutaneous).

Personal protective equipment:

- **Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- **Hand protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **Eye protection:** Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **Skin and body protection:** Wear complete suit protecting against chemicals / flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

- Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
- Specific engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form:	Liquid
	Colour:	Colourless
Safety data:	pH:	1.0 – 2 at 500 g/L
	Melting point / Freezing point:	13 °C (lit.)
	Boling point:	139 °C (lit.)
	Flash point:	46 °C – closed cup (lit.)
	Ignition temperature:	396 °C (lit.)
	Auto-ignition temperature:	no data available
	Lower explosion limit:	2 % (V)
	Upper explosion limit:	13.7 % (V)
	Vapour pressure:	5 hPa (4 mmHg) at 20 °C 53 hPa (40 mmHg) at 60 °C
	Density:	1.108 g/cm ³ at 25 °C
	Water solubility:	completely miscible
	Partition coefficient: n-octanol/water:	log Pow: 0.46
	Relative vapour density:	no data available
	Odour:	stench
	Odour threshold:	no data available
	Evaporation rate:	no data available

10. STABILITY AND REACTIVITY

Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	no data available
Conditions to avoid:	Heat, flames, sparks.
Materials to avoid:	Strong acids and strong bases; Oxygen; Peroxides; Polymerizing initiators.
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Carbon oxides. Other decomposition products: no data available.
Radioactivity:	Stable isotope compound. Not radioactive.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Oral LD50:	no data available
	Inhalation LC50:	no data available

	Dermal LD50:	no data available
	Other information on acute toxicity:	no data available
Skin corrosion/irritation:		no data available
Serious eye damage/eye irritation.		no data available
Respiratory or skin sensitization:		no data available
Germ cell mutagenicity:		no data available
Carcinogenicity:	IARC:	Group 3: Not classifiable as to its carcinogenicity to humans.
Reproductive toxicity:		no data available
Teratogenicity:		no data available
Specific target organ toxicity:	Single exposure (Globally Harmonized System):	no data available
	Repeated exposure (Globally Harmonized System):	no data available
Aspiration hazard:		no data available
Potential health effects:	Inhalation:	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
	Ingestion:	Toxic if swallowed.
	Skin:	Toxic if absorbed through skin. Causes skin burns.
	Eyes:	Causes eye burns. Causes severe eye burns.
Signs and symptoms of exposure:		Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
		Inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation.
		Spasm, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting.
Synergistic effects:		no data available
Additional information:	RTECS:	not available

12. ECOLOGICAL INFORMATION

Toxicity:	no data available
Persistence and degradability:	Biotic/Aerobic. Result: 100 % readily biodegradable.
Bioaccumulative potential:	no data available
Mobility in soil:	no data available
PBT and vPvB assessment:	no data available
Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
	Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product:	Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging:	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US):	UN number: 2218 Class: 8 (3) Packing group: II Proper shipping name: Acrylic acid, stabilized Reportable Quantity (RQ): Marine pollutant: No Poison Inhalation Hazard: No
IMDG:	UN number: 2218 Class: 8 (3) Packing group: II EMS-No: F-E, S-C Proper shipping name: Acrylic acid, stabilized Marine pollutant: No
IATA:	UN number: 2218 Class: 8 (3) Packing group: II Proper shipping name: Acrylic acid, stabilized

15. REGULATORY INFORMATION

WHMIS classification:	B3. Combustible liquid. D1B. Toxic material causing immediate and serious toxic effects: Toxic by ingestion. D2A. Very toxic material causing other toxic effects: Toxic by skin absorption. D2B. Toxic material causing other toxic effects: Carcinogen. E. Corrosive material: Skin sensitizer; Mutagen; Corrosive to metals; Corrosive to skin; Corrosive.
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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.

16. OTHER INFORMATION

Date of the latest revision:	18 January 2021
Further information:	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Polymer Source, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See www.polymersource.ca for additional terms and conditions of sale.