Safety Data Sheet

Version 7.1
Revision Date: 15/12/2020

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:	**Deuterated methyl methacrylate-d_8**
Product number:	D8MMA
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

WHMIS classification:
B2. Flammable liquid.
D2B. Toxic material causing other toxic effects:
Specific target organ toxicity – single exposure
Moderate skin irritant. Moderate eye irritant. Skin sensitizer.

GHS classification:
Flammable liquids (Category 2)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitisation (Category 1)
Specific target organ toxicity – single exposure (Category 2)
Specific target organ toxicity – single exposure (Category 3): Respiratory system

GHS Label elements, including precautionary statements:

Pictogram:

Signal word: Danger

Hazard statements:
H225. Highly flammable liquid and vapour.
H315. Causes skin irritation.
H317. May cause an allergic skin reaction.
H319. Causes serious eye irritation.
H335. May cause respiratory irritation.
H371. May cause damage to organs.

Precautionary statements:
P210. Keep away from heat, sparks, open flames, hot surfaces. No smoking.

P260. Do not breathe dust, fume, gas, mist, vapours, spray.
P280. Wear protective gloves.
P305 + P351 + P338. *If in eyes*:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS classification:	Health hazard:	2
	Chronic health hazard:	*
	Flammability:	3
	Physical hazards:	0
Potential health effects:	Inhalation:	May be harmful if inhaled. Causes respiratory tract irritation.
	Skin:	May be harmful if absorbed through skin. Causes skin irritation.
	Eyes:	Causes eye irritation.
	Ingestion:	May be harmful if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Formula:	Methyl methacrylate-d_8:	$C_5D_8O_2$
Concentration:	Deuterated methyl methacrylate:	> 99 % *(weight percent)
CAS registry number:	Methyl methacrylate-d_8:	35233-69-3
Stabilizer:	Hydroquinone (CAS # 123-31-9):	300 ppm

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:	Wash off with soap and plenty of water. Consult a physician.
In case of eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
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: Use personal protective equipment. 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.

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.

Use explosion-proof equipment. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Skin and body protection: 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: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- 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:	no data available
	Melting point / Freezing point:	–48 °C (lit.)
	Boling point:	100 °C (lit.)
	Flash point:	9 °C – closed cup (lit.)
	Ignition temperature:	no data available
	Auto-ignition temperature:	no data available
	Lower explosion limit:	2.12 % (V)
	Upper explosion limit:	12.5 % (V)
	Vapour pressure:	no data available
	Density:	1.011 g/cm^3 at 25 °C (lit.)
	Water solubility:	no data available
	Partition coefficient: n-octanol/water:	no data available
	Relative vapour density:	no data available
	Odour:	no data available
	Odour threshold:	no data available
	Evaporation rate:	no data available

10. STABILITY AND REACTIVITY

Chemical stability:	Polymerizes with evolution of heat. Avoid contact with incompatible materials. Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. Check inhibitor content often adding to bulk liquid if needed. Do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Stable under recommended storage conditions.
Possibility of hazardous reactions:	Polymerizes readily unless inhibited. Vapours may form explosive mixture with air.
Conditions to avoid:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Materials to avoid:	no data available
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:	Rat – 7,872 mg/kg
		Remarks – Behavioral: Coma. Muscle weakness. Respiratory disorder

	Inhalation LC50:	Rat – 4 h – 78,000 mg/L
	Dermal LD50:	Rabbit – > 5,000 mg/kg
		Remarks: Prolonged skin contact may cause skin irritation and/or dermatitis.
	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:	May cause allergic skin reaction.	
Germ cell mutagenicity:	no data available	
Carcinogenicity:	IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
	ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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:	May be harmful if inhaled. Causes respiratory tract irritation.
	Ingestion:	May be harmful if swallowed.
	Skin:	May be harmful if absorbed through skin. Causes skin irritation.
	Eyes:	Causes eye irritation.
Synergistic effects:	no data available	
Additional information:	RTECS:	not available

12. ECOLOGICAL INFORMATION

Toxicity:	Toxicity to fish LC50:	Pimephales promelas (fathead minnow): 125.5–275.0 mg/L – 96 h
	Toxicity to daphnia and other aquatic invertebrates EC50:	Daphnia magna (Water flea): 720 mg/L – 48 h
	Toxicity to algae LC50:	Pseudokirchneriella subcapitata (green algae): 170 mg/L – 96 h
Persistence and degradability:	no data available	
Bioaccumulative potential:	no data available	
Mobility in soil:	no data available	
PBT and vPvB assessment:	no data available	
Other adverse effects:	no data available	

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: 1247 Class: 3 Packing group: II Proper shipping name: Methyl methacrylate monomer Reportable Quantity (RQ): Marine pollutant: No Poison Inhalation Hazard: No
IMDG:	UN number: 1247 Class: 3 Packing group: II EMS-No: F-E, S-D Proper shipping name: Methyl methacrylate monomer Marine pollutant: No
IATA:	UN number: 1247 Class: 3 Packing group: II Proper shipping name: Methyl methacrylate monomer

15. REGULATORY INFORMATION

WHMIS classification:

B2. Flammable liquid.

D2B. Toxic material causing other toxic effects:
Specific target organ toxicity – single exposure:
Moderate skin irritant. Moderate eye irritant. Skin sensitizer.

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:	15 December 2020
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.