

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : IN-SITU HYDROPHOBIC MONOMER

1. Product and Company Identification

Product name: In-Situ Hydrophobic Monomer / HMDSO Hydrophobic Monomer
Synonyms: Hexamethyldisiloxane
Item Numbers: E400-00-403, E420-47-500

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2. Hazards Identification

EMERGENCY OVERVIEW

Clear, colourless, liquid. Irritates skin and eyes, and may be harmful if swallowed or inhaled. Highly flammable. Vapour may travel a considerable distance to a source of ignition and flash back. Toxic fumes emitted on combustion. For short and long term exposure effects see Section 11 Toxicological data.

Eye Effects: May cause watering and blurred vision. May cause pain and redness of the eyes.

Skin Effects: May cause redness or whitening of the skin, irritation and/or pain. May be harmful if absorbed through the skin.

Ingestion/Oral Effects: May cause nausea, stomach pain and vomiting. The affected person may seem intoxicated. May cause convulsions and unconsciousness.

Inhalation Effects: May cause symptoms similar to those for ingestion. May cause drowsiness or mental confusion. May cause a feeling of tightness in the chest and shortness of breath.

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MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: No data available.

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	1	Health	1	0 = No Hazard
Flammability	3	Flammability	3	1 = Slight Hazard
Instability	1	Reactivity	1	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

3. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
Hexamethyldisiloxane (C ₆ H ₁₈ OSi ₂)	> 98	107-46-0	F	R11

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

4. First Aid Measures

- Eyes:** Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.
- Skin:** Remove contaminated clothing and shoes unless stuck to the skin. Wash the affected skin with running water for at least 15 minutes, until the skin is clear of all substances. Seek medical attention.
- Ingestion/Oral:** Wash mouth out with water. Do not induce vomiting. If the affected person is conscious, give half a litre of water to be drunk immediately. If unconscious, check for breathing; suitably qualified persons should administer oxygen or artificial respiration as necessary; place the affected person in the recovery position. Seek immediate medical attention.
- Inhalation:** Wear suitable respiratory protection and remove the affected person to fresh air. If conscious, get the affected person to sit or lie down. If unconscious and breathing normally, place the affected person in the recovery position. If breathing problems occur, suitably qualified persons should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.
- Other Information:** Note to physicians: treat symptomatically and supportively.

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5. Fire Fighting Measures

Extinguishing Media: Use suitable extinguishing media for the surrounding fire. Carbon dioxide, dry powder, alcohol or polymer foam, or halons. Use water spray to cool containers.

Fire and Explosion Hazard: Flammable liquid and vapours. Vapours may form an explosive mixture with air, and can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire.

Special Protective Equipment for Fire Fighters: Fire fighters should wear a self-contained breathing apparatus (SCBA) in pressure demand, NIOSH (or equivalent) approved, and full protective gear.

For Flammability Properties - see Section 9.

6. Accidental Release Measures

Avoid discharge into the environment. Isolate the area of the release. Use spark-proof tools, remove all sources of ignition and wear proper personal protective equipment as described in Section 8.

If outside do not approach from downwind. Keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid. Absorb spills in suitable inert material (e.g. sand, earth or vermiculite), then place in suitable tightly closed containers for disposal. Absorbed material may still present a fire hazard: handle and dispose of the material accordingly.

7. Handling and Storage

Handling: Use spark-proof tools and explosion-proof equipment. Avoid breathing dust, vapour, mist or gas. Avoid contact with skin and eyes. Use only in a chemical fume hood. Change contaminated clothes promptly due to fire hazard. Do not smoke in areas where the product is used or stored. Wash thoroughly after handling, and before meals, breaks, and leaving the work area. Empty containers may contain flammable product residue. Handle and dispose of accordingly. Do not reuse empty containers until appropriately reconditioned.

Storage: Keep away from sources of ignition. Store in a cool, dry place in a tightly closed container. Keep in a storage area that is approved for flammable products.

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8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Hexamethyldisiloxane	None listed	None listed	None listed

Personal Protection:

Engineering Measures: Use only in a chemical fume hood. Use explosion proof ventilation equipment to keep airborne concentrations low. Ensure lighting and electrical equipment in the work area are not sources of ignition. Ensure that an eye bath is close to hand.

Respiratory Protection: Comply with the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Hand/Skin Protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Eye/Face Protection: Wear appropriate chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Hygiene Measures: Do not handle with bare hands and without wearing the appropriate safety clothing/equipment: see above. Wash thoroughly after handling, and before meals, breaks, and leaving the work area.

Other/General Protection: Do not smoke in areas where this product is used or stored.

9. Physical and Chemical Properties

Appearance and Odour	Clear colourless liquid	Boiling point	99-100 / 210-212	°C/°F
pH (as supplied)	No data available	Melting Point	-67 / -88	°C/°F
Solubility in Water	Insoluble	Auto Ignition	340 / 644	°C/°F
Volatile Content by Volume	No data available	Flash Point	-1 / 30.2	°C/°F
Specific Gravity	0.76			
Vapour Pressure (mbar)	44	Vapour Pressure (Torr)	33	
Explosion limit (lower)	0.5% volume	Explosion limit (upper)	22.9% volume	
Molecular weight	162.38	Viscosity	0.5 mPa.s @ 25 °C	

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10. Stability and Reactivity

Stability:	Stable under normal temperatures and pressures.
Material/Conditions to Avoid:	Strong acids, strong bases and strong oxidizing agents, alkalis, moist air and water. Direct sunlight. Heat, hot surfaces and ignition sources.
Hazardous Decomposition:	Carbon monoxide, carbon dioxide, silicon oxide.
Hazardous Polymerisation:	Will not occur.

11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation refer to Section 2 Hazards Identification.

Animal data:

LD50 value:	Oral: LDLo: 50 gm/kg (guinea pig), 8 mL/kg (rat).	Dermal: 16 ml /kg (rabbit).
LC50 value:	15956 ppm/4h (rat).	

Carcinogenicity:

Not listed by ACGIH, IARC, NIOSH, NTP or OSHA.

Epidemiology

Animal studies have reported the development of tumours.

Reproductive effects

Adverse reproductive effects have occurred in experimental animals.

Other information:

Subacute to chronic toxicity: hexamethyldisiloxane is mildly irritating and mildly toxic. Exposure to very high concentrations by inhalation or ingestion may cause somnolence, ataxia, convulsions or flaccid paralysis. Chronic exposure may cause changes to respiration, liver, kidneys, bladder, adrenal gland, metabolism and blood serum composition.

Irritation of skin:	Mild: 500 mg/24h (rabbit).
Irritation of eyes:	Mild: 100 µL/24h (rabbit).

12. Ecological Information

The material is non-biodegradable and can accumulate in the environment.

13. Disposal Considerations

Arrange disposal of used material as special waste, in compliance with national and local regulations.
Arrange for collection of packaging by specialised disposal company.

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14. Transport Information

This product is classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Flammable Liquid, N.O.S. (hexamethyldisiloxane)	Flammable Liquid, N.O.S. (hexamethyldisiloxane)	Flammable Liquid, N.O.S. (hexamethyldisiloxane)
Hazard Class	3	3	3
Identification Number	UN 1993	UN 1993	UN 1993
Shipping Label	FLAMMABLE	FLAMMABLE	FLAMMABLE

Packing group : II

Land transport ADR/RID - Class : 3; Item : 3b; Danger code (Kemler) : 33.

Maritime transport IMDG - Class 3.

Air transport ICAO/IATA - Class 3.

15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply: Yes.

Risk Phrases:	R11	Highly flammable.
Safety Phrases:	S9	Keep container in a well-ventilated place.
	S16	Keep away from sources of ignition - No smoking.
	S23	Do not breathe fumes.
	S24/25	Avoid contact with skin and eyes.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S28	After contact with skin, rinse immediately with plenty of water and seek medical advice.
	S33	Take precautionary measures against static discharges.
Symbols:	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S60	This material and its container must be disposed of as hazardous waste.
Symbols:	F	Highly flammable.

United States Regulatory Information

All materials contained in this product are listed on the U.S. Toxic Substances Control Act (TSCA).

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and 40 CFR Part 372.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

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Canadian Regulatory Information

WHMIS Classification: B2, D2B.

CAS# 107-46-0 is included in the Canadian DSL list.

16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- Fluorochem "HEXAMETHYLDISILOXANE" Safety Data Sheet. Revision No 1, issued: 07/07/2005.

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ANSI - American National Standards Institute; Canadian TDG - Canadian Transportation of Dangerous Goods; CAS - Chemical Abstracts Service; Chemtrec - Chemical Transportation Emergency Center (US); DSL - Domestic Substances List; EH40 (UK) - HSE Guidance Note EH40 Occupational exposure limits; EPCRA - Emergency Planning and Community Right-to-Know Act; HMIS - Hazardous Material Information Service; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; LC - Lethal Concentration; LD - Lethal Dose; NFPA - National Fire Protection Association; NIOSH - National Institute for Occupational Safety and Health; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration, US department of Labour; PEL - Permissible exposure limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; RTECS - Registry of Toxic Effects of Chemical Substances; SARA (Title III) - Superfund Amendments and Reauthorization Act; SARA 313 - Superfund Amendments and Reauthorization Act, Section 313; SCBA - Self-Contained Breathing Apparatus; SNUR - Significant New Use Rule; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act Public Law 94-469; US DOT - US Department of Transportation; WHMIS - Workplace Hazardous Materials Information System.

Revisions:

October 2010 - Data Sheet updated to reflect the latest regulatory and supplier safety information.

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