

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name : H-SiQ
CAS-No : 137125-44-1, 108-10-1
Identified Uses : Laboratory chemical, synthesis of substances.
Company : DisChem, Inc.
 17595 Boot Jack Rd, Ste A
 Ridgway, PA USA
Telephone : (814) 772-6603

2. HAZARDS AND IDENTIFICATION COMPOSITION/INFORMATION ON INGREDIENTS

Classification of the substance or mixture

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Flammable liquids (Category 2), H225

Acute toxicity, Inhalation (Category 4), H332

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P233 Keep container tightly closed.
 P240 Ground and bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242 Use non-sparking tools.
 P243 Take action to prevent static discharges.
 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.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P303+P361+P353 IF ON SKIN (or hair) Take off immediately all contaminated clothing. Rinse skin with water.
 P304+P340+P312 IF INHALED Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

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P305+P351+P338 IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists	Get medical advice/ attention.
P370+P378 In case of fire	Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
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.
P501	Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Synonyms	:	Hydrogen silsesquioxane Isobutyl methyl ketone Methyl isobutyl ketone Isopropylacetone
Formula	:	(HSiO _{1.5}) _n (SiO _x) C ₆ H ₁₂ O (MIBK)
Molecular weight	:	100.16 g/mol (MIBK)
CAS-No.	:	137125-44-1 (SiO _x) 108-10-1 (MIBK),
EC-No.	:	203-550-1 (MIBK)
Index-No.	:	606-004-00-4 (MIBK)
Hazardous Components	:	

Component	CAS No.	Classification	Concentration (Weight %)
4-Methylpentan-2-one	108-10-1	Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2A; STOT SE 3; H225, H319, H332, H335	80 - 99 %
SiO _x	137125-44-1	Not classified	1-20 %

4. FIRST AID MEASURES

Inhalation	:	Remove to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	:	Wash off with soap and water. Remove any contaminated clothing. Consult a physician.
Eye contact	:	Rinse thoroughly with water for at least 15 minutes. Consult a physician.
Ingestion	:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Fire and explosion hazard	:	No known special hazards arising from substance or mixture.
Suitable extinguishing media	:	Dry powder, Dry sand.
Unsuitable extinguishing media	:	Do not use jet water.
Advice for firefighters	:	Wear self-contained breathing apparatus for firefighting is necessary.

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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Use appropriate 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 for 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.

7. HANDLING AND STORAGE

- Handling** : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use only in well ventilated area. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.
- 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. Storage class (TRGS 510): 3: Flammable liquids

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Control Parameters/ exposure limits :

Components	CAS-No.	Value	Control parameters	Basis
4-Methylpentan-2-one	108-10-1	STEL	75 ppm 307 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	50 ppm 205 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAEV	50 ppm 205 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEV	75 ppm 307 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	20 ppm	Canada. British Columbia OEL
Remarks	IARC '2B' applies to substances deemed possibly carcinogenic to humans.			
		STEL	75 ppm	Canada. British Columbia OEL
	IARC '2B' applies to substances deemed possibly carcinogenic to humans.			
		STEL	75 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	20 ppm	USA. ACGIH Threshold Limit Values (TLV)

Personal protection equipment:

- Eye/Face 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 protection** : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid

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skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 175 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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.
Respiratory protection	:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).
Control of environmental exposure	:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Hygiene Measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Liquid
Colour	:	Colorless
Odour	:	No data available
pH	:	No data available
Boiling point	:	117 - 118 °C (243 - 244 °F)
Melting point	:	Melting point/range: -80 °C (-112 °F) - lit.
Decomposition temperature	:	No data available
Flash point	:	14 °C (57 °F) - closed cup
Flammability (solid, gas)	:	No data available
Upper/lower flammability or explosive limits	:	Upper explosion limit: 8 %(V) Lower explosion limit: 1.2 %(V)
Autoignition temperature	:	No data available
Vapour pressure	:	20 hPa (15 mmHg) at 20 °C (68 °F)
Vapour density	:	3.46 – (air = 1.0)

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Relative density	:	0.801 g/cm ³ at 25°C (77°F)
Water solubility	:	ca 20g/l
Partition coefficient: n-Octanol/water	:	log Pow: 1.31
Viscosity	:	No data available
Physical appearance	:	Colourless liquid

10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under recommended storage conditions. Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year. Stable under recommended storage conditions.
Conditions to avoid	:	Heat, flames and sparks. Extremes of temperature and direct sunlight. May form peroxides of unknown stability. Heat, flames and sparks.
Incompatible materials	:	Oxidizing agent, strong bases
Hazardous decomposition products	:	Hazardous decomposition products formed under fire conditions. - Carbon oxides, hydrogen. Other decomposition products - No data available

11. TOXICOLOGICAL AND REACTIVITY

Acute toxicity	:	LD50 Oral - Rat - 2,080 mg/kg LC50 Inhalation - Rat - 4 h - 8.2 - 16.4 mg/l LD50 Dermal - Rabbit - > 16,000 mg/kg No data available
Skin corrosion/irritation	:	Skin - Rabbit Result: Mild skin irritation - 24 h
Serious eye damage/eye irritation	:	Eyes - Rabbit Result: Moderate eye irritation - 24 h
Respiratory or skin sensitization:	:	No data available
Carcinogenicity	:	IARC: 2B - Group 2B: Possibly carcinogenic to humans (4-Methylpentan-2-one)
Reproductive toxicity	:	No data available Developmental Toxicity - Mouse - Inhalation Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death. Developmental Toxicity - Mouse - Inhalation Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.
Specific target organ toxicity -single exposure	:	May cause respiratory irritation.
Specific target organ toxicity -repeated exposure	:	No data available
Aspiration hazard	:	No data available
Additional Information	:	RTECS: SA9275000

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Blurred vision, Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

Toxicity	:	Toxicity to fish LC0 - <i>Leuciscus idus melanotus</i> - 480 mg/l - 48 h Toxicity to daphnia and other aquatic invertebrates EC50 - <i>Daphnia magna</i> (Water flea) - 1,550 - 3,623 mg/l - 24 h Toxicity to algae EC50 - <i>Desmodesmus subspicatus</i> (green algae) – 980-2,000 mg/l - 48 h
Persistence and degradability:	:	Biodegradability Biotic/Aerobic - Exposure time 7 d
Bioaccumulative potential	:	No data available
Mobility in soil	:	No data available
Results of PBT and vPvB assessment	:	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects	:	No data available

13. DISPOSAL CONSIDERATION

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

14. TRANSPORT INFORMATION

TDG (Canada)

UN number	:	1245
Class	:	3
Packing group	:	II
Proper shipping name	:	METHYL ISOBUTYL KETONE

IMDG

UN number	:	1245
Class	:	3
Packing group	:	II
EMS-No	:	F-E, S-D
Proper shipping name	:	METHYL ISOBUTYL KETONE

IATA

UN number	:	1245
Class	:	3
Packing group	:	II
Proper shipping name	:	Methyl isobutyl ketone

OTHER INFORMATION: Harmonized Tariff Code (HS) 3910.00.000 (silsequioxanes)

15. REGULATORY INFORMATION

Developed in accordance with the Hazardous Product Regulations (HPR).

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is accurate to the best of our knowledge at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, since the conditions of the abovementioned operations are beyond our control. The information relates only to the designated material and may not be valid for such material used in the combination with any other materials or in any processes unless specified in the text.