SAFETY DATA SHEET

1. Identification

Product identifier **Cyclomethicone 4**

Other means of identification

Catalog number 1154707

Chemical name Octamethylcyclotetrasiloxane

Recommended use Specified quality tests and assay use only.

Recommended restrictions Not for use as a drug. Not for administration to humans or animals.

Manufacturer/Importer/Supplier/Distributor information

Company name U. S. Pharmacopeia

Address 12601 Twinbrook Parkway
Rockville
MD
20852-1790
US

Telephone RS Technical Services 301-816-8129

Website www.usp.org

E-mail RSTECH@usp.org

Emergency phone number CHEMTREC within US & Canada 1-800-424-9300
CHEMTREC outside US & Canada +1 703-527-3887

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Serious eye damage/eye irritation	Category 2B
	Reproductive toxicity (fertility)	Category 2

OSHA hazard(s) Not classified.

Label elements

Signal word Warning

Hazard statement Flammable liquid and vapor. Harmful if swallowed. Harmful in contact with skin. Causes eye irritation. Suspected of damaging fertility or the unborn child.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a poison center/doctor if you feel unwell. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. In case of fire: Use appropriate media for extinction.

Storage Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.

3. Composition/information on ingredients

Substance

Hazardous components

Chemical name	Common name and synonyms	CAS number	%
Cyclomethicone 4		556-67-2	100

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Take off immediately all contaminated clothing. Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention if irritation develops and persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Most important symptoms/effects, acute and delayed Irritation of eyes and mucous membranes.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical By heating and fire, harmful vapors/gases may be formed. No unusual fire or explosion hazards noted.

Special protective equipment and precautions for firefighters Wear suitable protective equipment. Use protective equipment appropriate for surrounding materials.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of vapors. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up Remove sources of ignition. Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Clean surface thoroughly to remove residual contamination. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

7. Handling and storage

Precautions for safe handling As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.

Conditions for safe storage, including any incompatibilities Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines No exposure standards allocated.

Appropriate engineering controls	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials.

Individual protection measures, such as personal protective equipment

Eye/face protection	Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.
Skin protection	
Hand protection	Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.
Other	For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.
Respiratory protection	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).
Thermal hazards	Not available.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Clear, colorless oily liquid.
Physical state	Liquid.
Form	Liquid.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	63.5 °F (17.5 °C)
Initial boiling point and boiling range	347 °F (175 °C)
Flash point	123.80 °F (51.00 °C) Closed Cup
Evaporation rate	< 1
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.14 kPa at 25 °C
Vapor density	> 1
Relative density	Not available.
Solubility in water	0.005 mg/l ; practically insoluble.
Partition coefficient (n-octanol/water)	5.1
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Chemical family	Cyclic siloxane.
Molecular formula	C8H24O4Si4
Molecular weight	296.64
Percent volatile	< 1 %

Solubility (other)	Soluble in carbon tetrachloride.
Specific gravity	0.9558

10. Stability and reactivity

Reactivity	No reactivity hazards known.
Chemical stability	Stable at normal conditions. Risk of ignition.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Sources of ignition. Avoid temperatures exceeding the flash point.
Incompatible materials	Oxidizing agents.
Hazardous decomposition products	SiOx. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Due to lack of data the classification is not possible.
Skin contact	Harmful in contact with skin.
Eye contact	Causes eye irritation.
Symptoms related to the physical, chemical, and toxicological characteristics	Nausea.
Acute toxicity	Harmful if swallowed. Harmful in contact with skin.

Product	Species	Test Results
Cyclomethicone 4 (CAS 556-67-2)		
Acute		
Dermal		
LD50	Rat	> 2400 mg/kg
		1770 mg/kg
Inhalation		
LC50	Rat	36000 mg/m3, 4 hours
Oral		
LD50	Mouse	1700 mg/kg
	Rat	> 4800 mg/kg
		1540 mg/kg

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Causes eye irritation.

Local effects

500 mg/day Eye irritancy - Standard Draize
Result: Mild irritation.
Species: Rabbit
500 mg/day Skin irritancy - Standard Draize
Result: Mild irritation.
Species: Rabbit

Respiratory sensitization	Due to lack of data the classification is not possible.
Skin sensitization	Based on available data, the classification criteria are not met.

Sensitization

Maximization test
Result: Negative.
Species: Guinea pig
Organ: skin
Repeat Insult Patch test
Result: Negative.
Species: Human
Organ: skin

Germ cell mutagenicity	Based on available data, the classification criteria are not met.

Mutagenicity

In vitro Ames preincubation test with Salmonella typhimurium, with and without activation
Result: Negative.
In vitro chromosome aberration assay in Chinese hamster ovary cells, with and without activation
Result: Negative.
In vitro mouse lymphoma assay
Result: Negative.
In vitro sister chromatid exchange assay in Chinese hamster ovary cells
Result: Negative.
In vivo clastogenic potential screen in rats
Result: Negative.
In vivo dominant lethal assay in rats
Result: Negative.
In vivo rat bone marrow chromosomal aberration test
Result: Negative.
Yeast gene mutation assay in Saccharomyces cerevisiae
Result: Negative.

Carcinogenicity Due to lack of data the classification is not possible.
This material is not considered to be a carcinogen by IARC, NTP, or OSHA.

10 - 700 ppm Carcinogenicity study, administered by inhalation.
Result: NOAEL = 150ppm (females), >=700ppm (males).
Endometrial adenomas in female uteri.
Species: Rat
Test Duration: 2 years

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Reproductivity

0 - 700 ppm 2-Generation reproductive and developmental toxicity, administered by inhalation.
Result: Decreased mating and fertility indices.
Species: Rat
100 - 500 ppm Reproductivity and development study, administered by inhalation during gestation.
Result: No effect on fetal development.
Species: Rabbit
1000 mg/kg/day Teratogenicity study, administered subcutaneously.
Result: Negative.
Species: Rabbit

Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Due to lack of data the classification is not possible.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
Cyclomethicone 4 (CAS 556-67-2)			
Acute			
Crustacea	EC50	Daphnia magna	> 25.2 mg/l, 24 hours
Aquatic			
Acute			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1000 mg/l, 96 hours
		Zebra danio (Danio rerio)	> 500 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions	Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.
Local disposal regulations	Not available.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Octamethylcyclotetrasiloxane)
Transport hazard class(es)	3
Subsidiary class(es)	Not available.
Packing group	III

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Octamethylcyclotetrasiloxane)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packaging group	III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available.

DOT

IATA

15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

SARA 311/312 Hazardous chemical	No

Other federal regulations

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.
US state regulations	California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date	02-27-2009
Revision date	06-26-2014
Version #	03
Further information	Not available.
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Revision Information	This document has undergone significant changes and should be reviewed in its entirety.