

SAFETY DATA SHEET

Cyclo-2245 (D5) Cyclomethicone

Data Prepared: October 1st, 2022



SECTION 1: Product and company identification

Product name : Cyclo-2245 (D5) Cyclomethicone

Other means of identification

Synonyms : Decamethylcyclopentasiloxane

Manufacturer or supplier details

Company name of supplier : Clearco Products Co Inc.

Address : 15 York Road
Willow Grove, PA 19090 U.S.A.

Telephone : 215-366-7860

Emergency Telephone : CHEM TEL: 1-800-255-3924 (DOMESTIC)
+01-813-248-0585 (INTERNATIONAL)

SECTION 2: Hazards identification

Hazard Classification

Physical Hazards

Flammable liquids : Category 4

Unknown toxicity-Health

Acute toxicity, oral	0%
Acute toxicity, dermal	0%
Acute toxicity, inhalation, vapor	0%
Acute toxicity, inhalation, dust or mist	0%

Label Elements

Hazard Symbol : No symbol
Signal Word : Warning
Hazard Statement : H227; Combustible liquid

Precautionary statements

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protecting clothing/eye protection/face protection.

Response : IF exposed or concerned: Get medical advice/attention. In case of fire, use sand, dry chemical or alcohol-resistant foam.

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

Disposal : Dispose of contents/container to an appropriate treatment and disposal facility accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification : None

SECTION 3: Composition/information on ingredients**Substances****Composition information of impurities and stabilizers****Chemical name** : Decamethylcyclopentasiloxane

Chemical identity	CAS number	Content in percent (%)
Octamethylcyclotetrasiloxane	556-67-2	0.1-<1%

All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume

SECTION 4: First aid measures

Ingestion: Do NOT induce vomiting. Do not give victim anything to drink if he is unconscious. Get medical attention.

Inhalation: If inhaled, remove to fresh air. If no breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

Skin contact: Wash area with soap and water. Get medical attention if symptoms occur.

Eye contact: In case of contact with eye, rinse immediately with plenty of water and seek medical advice.

Most important symptoms/effects, acute and delayed

Symptoms: None known

Hazards: This product is not expected to produce adverse effects under normal conditions of use and appropriate personal hygiene.

Indication of immediate medical attention and special treatment needed

Treatment: No data available

SECTION 5: Fire-fighting measures

General Fire Hazards: Wear self-contained breathing apparatus and protecting clothing. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Carbon dioxide Foam. Water spray

Unsuitable extinguishing media : Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical : Vapours may form explosive mixture with air. May travel considerable distance to source of ignition and flash back. In case of fire, carbon monoxide and carbon dioxide may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures : Move container from fire area if it can be done without risk. Cool fire endangered containers with fire.

Special protective equipment for fire-fighters : Combustible fire fighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes. Keep out of reach of children. Attention: Not for injection into humans.

Methods and material for containment and cleaning up : Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section. Wipe, scrape, or soak up in an inert material and put in a container intended for flammable materials for disposal.

Environmental precautions : Do not allow runoff to sewer, waterway or ground.

SECTION 7: Handling and storage

Precautions for safe handling : Sensitivity to static discharge is expected; material has a flash point below 200F.

Conditions for safe storage including any incompatibilities : Keep away from heat, sparks and open flame. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection**Control parameters****Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
Octamethylcyclotetrasiloxane	TWA	5ppm	10 ppm
Octamethylcyclotetrasiloxane-Vapor	ST ESL	1,000µg/m ³	US. Texas Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	100 µg/m ³	US. Texas Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Octamethylcyclotetrasiloxane	TWA	10 ppm	US. OARS WEELs Workplace Environmental Exposure Level Guide (2014)

Appropriate Engineering Controls Safety shower. Ventilation and other forms of engineering controls are preferred for controlling exposures. Respiratory protection may be needed for non-routine or emergency situations.

Individual protection measures, such as personal protective equipment

General information: Ventilation and other forms of engineering controls are preferred for controlling exposures. Respiratory protection may be needed for non-routine or emergency situations.

Eye/face protection: Safety glasses with side shields

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Wear suitable protective clothing and eye/face protection

Respiratory Protection: If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air

respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

Hygiene measures: Avoid contact with eyes, skin and clothing. Wash hands after handling. When using do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

Appearance

Physical state : Liquid
Form : Liquid
Color : Colorless
Odor : Faint
Odor threshold : No data available
pH : No data available
Melting point : <-40°C
Initial boiling point and boiling range : 210.00°C
Flash point : 76.6°C (Closed Cup) Product does not sustain combustion.
Method: Tag closed cup

Evaporation rate : <1

Flammability (solid,gas) : This product is not flammable

Upper/lower limit on flammability or explosive limits

Flammability limit-upper (%) : No data available

Flammability limit- lower (%) : No data available

Explosive limit-upper (%) : No data available

Explosive limit-lower (%) : No data available

Heat of combustion : No data available

Vapor pressure : 0.16 hPa (20°C)

Vapor density : No data available

Density : 0.95 g/cm³

Relative Density : 0.95

Solubility(ies)

Solubility in water : Insoluble

Solubility (other) : Soluble in toluene

Partition coefficient: n- octanol/water Log : 8.02

Pow

Auto-ignition temperature : 392°C

Decomposition temperature : No data available

SADT : No data available

Viscosity, dynamic : 4mPas (20°C)

Viscosity, kinematic : Not available

Other information

Minimum ignition temperature : 450°C (1.013 hPa)

Explosive properties : Not classified

VOC : 0g/l

SECTION 10: Stability and reactivity

Reactivity:	No dangerous reaction if used as recommended
Chemical Stability:	Material is stable under normal conditions
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Keep away from sources of ignition- No smoking
Incompatible Materials:	Strong Acids, Strong Bases Oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Silicone dioxide. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

SECTION 11: Toxicological information**Information on likely routes of exposure**

Ingestion:	No data available
Inhalation:	No data available
Skin Contact:	No data available
Eye Contact:	No data available

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available
Inhalation:	No data available
Skin Contact:	No data available
Eye Contact:	No data available

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)****Oral**

Product:	LD 50 (Rat): >5,000 mg/kg
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Specified substance(s):

Octamethylcyclotetrasiloxane	LD 50 (Ra): 4,800 mg/kg
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Dermal

Product:	LD 50 (Rabbit): >2,000 mg/kg
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Specified substance(s):

Octamethylcyclotetrasiloxane	LD50 (Rat): >2,400 mg/kg
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Inhalation

Product:	LC50 (Rat): 8.67 mg/l
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Specified substance(s):

Octamethylcyclotetrasiloxane	LC50(Rat): 36 mg/l
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Repeated dose toxicity

Product:	No data available
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Skin Corrosion/Irritation

Product:	(Rabbit, 72h): No skin irritation
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Serious Eye Damage/Eye Irritation

Product:	OECD Test Guideline 405 (Rabbit, 72 h): Non irritating
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Respiratory or Skin Sensitization Product: Buhler-Patch-Test skin sensitization on guinea pigs: negative

Carcinogenicity Product: No data available

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vivo Product: No data available

Specified substance(s):
Octamethylcyclotetrasiloxane Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology Micronucleus Test)) Inhalation (Rat, male and female): negative

Reproductive toxicity Product: No data available

Specific Target Organ Toxicity-Single Exposure Product: No data available

Specific Target Organ Toxicity-Repeated Exposure Product: No data available

Aspiration Hazard Product: No data available

Other effects: Decamethylcyclopentasiloxane
Rodents repeatedly exposed to decamethylcyclopentasiloxane (D5) via inhalation or ingestion developed increased liver weights relative to unexposed control animals. When the exposure was stopped, livers returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. Liver enlargement was due to an increase in metabolizing enzymes, and a temporary increase in the number and size of normal cells (hyperplasia and hypertrophy). These biochemical pathways are more sensitive in rodents than in humans. Inhalation exposures that are typical in industrial use (5-10 ppm) showed no toxic effects in rodents.

A two-year combined chronic toxicity and carcinogenicity inhalation study was conducted with decamethylcyclopentasiloxane (D5) in Fisher-344 rats by whole body inhalation. A statistically significant increase in the trend for uterine endometrial tumors was observed in female rats exposed for 24 months at the highest dose level of 160 ppm. The same effects were not seen at the other dose levels of 10

and 40ppm. No adverse effects were seen at male rats at any level. Whether or not this increase in incidence truly related to the exposure to D5 is questionable and yet to be determined. Based on our present knowledge, it is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans. Clearco's Recommended Exposure Guideline for D5 is 10ppm.

Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day, 14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level—a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year study occurred through a biological pathway that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

SECTION 12: Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:

No data available

Aquatic Invertebrates

Product: No data available

Chronic hazards to the aquatic environment:**Fish**

Product: No data available

Aquatic Invertebrates

Product: No data available

Toxicity to Aquatic Plants

Product: No data available

Persistence and Degradability**Biodegradation**

Product: No data available

Specified substance(s):

Octamethylcyclotetrasiloxane 3.7% (29D, 310 Ready Biodegradability-CO₂ in Sealed Vessels (Headspace Test) Not readily biodegradable.

BOD/COD Ratio

Product: No data available

Bioaccumulative potential**Bioconcentration Factor (BCF)**

Product: No data available

Specified substance(s):

Octamethylcyclotetrasiloxane Fathead Minnow, Bioconcentration Factor (BCF): 12.40

Partition Coefficient n-octanol/water (log K_{ow})

Product: Low K_{ow}: 8.02 23°C

Mobility in soil:

No data available

Known or predicted distribution to environmental compartments

Octamethylcyclotetrasiloxane No data available

Other adverse effects:

No data available

SECTION 13: Disposal considerations+**General information:**

The generation of waste should be avoided or minimized wherever possible. Do not discharge into drains, water courses or onto the ground. See Section 8 for information on appropriate personal protective equipment.

Disposal instructions:

Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging:

No data available

SECTION 14: Transport information**DOT**

Not regulated

IMDG

Not regulated

IATA

Not regulated

Special precautions for user:

This product is not regarded as dangerous goods according to national and international regulations on the transport of dangerous goods.

SECTION 15: Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Flammable (gases, aerosols, liquids, or solids)

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities

SARA 311/312 Hazardous Chemical**Chemical Identity**

Octamethylcyclotetrasiloxane

Threshold Planning Quantity

10000 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities

Clean Air Act (CAA) Section 112® Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US California Proposition 65**

No ingredient requiring a warning under CA Prop 65.

US New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Decamethylcyclopentasiloxane

Dodecamethylcyclohexasiloxane

Octamethylcyclotetrasiloxane

US Massachusetts RTK-Substance List

No ingredient regulated by MA Right-to-Know Law present.

US Pennsylvania RTK-Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

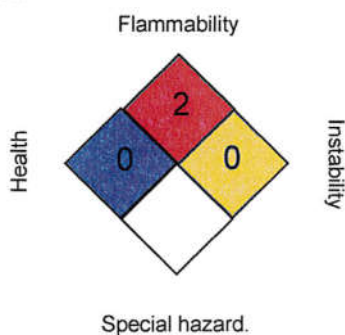
Inventory Status:

Australia AICS:	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	On or in compliance with the inventory	Remarks: None.
EINECS, ELINCS or NLP:	On or in compliance with the inventory	Remarks: None.
Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory	Remarks: None.
Canada NDSL Inventory:	On or in compliance with the inventory	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: None.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.

SECTION 16: Other information

Further information

NFPA:



HMIS® IV:

HEALTH	/	0
FLAMMABILITY		2
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.