



## SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended.

Version #: 02

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Name of the substance	Organopolysiloxane
Trade name of the substance	KF-965-1,000CS
Identification number	-
Registration number	-
Synonyms	None.
Sales Code	0355M2
Issue date	01-10-2021
Version number	02
Revision date	16-01-2023
Supersedes date	01-10-2021

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Fluids, Modified silicone fluids Heating medium
Uses advised against	Industrial use only.

#### 1.3. Details of the supplier of the safety data sheet

##### MANUFACTURER

Company name	Shin-Etsu Chemical Co., Ltd.
CONTACT	Quality Assurance Department (Gunma Complex)
Address	13-1, Isobe 2-chome, Annaka-shi, Gunma 379-0195, JAPAN
TELEPHONE NUMBER	+81(0)27-385-2172
Fax number	+81(0)27-385-2753

##### SUPPLIER

Company name	Shin-Etsu Silicones Europe B.V.
CONTACT	Quality Assurance Department
Address	Bolderweg 32, 1332AV Almere, the Netherlands
TELEPHONE NUMBER	+31 (0)36 54 93 170
Fax number	+31 (0)36 53 26 459
E-mail	sds@shinetsusilicones.eu

#### 1.4. Emergency telephone

+31 (0)36 54 93 170  
available for office hours CET

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

##### Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

#### 2.2. Label elements

##### Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms	None.
Signal word	None.
Hazard statements	The substance does not meet the criteria for classification.

##### Precautionary statements

Prevention	Not available.
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<b>Response</b>	Not available.
<b>Storage</b>	Not available.
<b>Disposal</b>	Not available.
<b>Supplemental label information</b>	None.
<b>2.3. Other hazards</b>	Not a PBT or vPvB substance or mixture.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Organopolysiloxane	100	Proprietary	-	-	
<b>Classification: -</b>					
Octamethylcyclotetrasiloxane	0,01 - 0,025	556-67-2 209-136-7	-	014-018-00-1	
<b>Classification:</b> Flam. Liq. 3;H226, Repr. 2;H361f, Aquatic Chronic 1;H410(M=10)					

##### List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

ATE: Acute toxicity estimate.

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

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

**Composition comments** The full text for all H-statements is displayed in section 16.

### SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Eye contact</b>	Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention immediately.

**4.2. Most important symptoms and effects, both acute and delayed** Not available.

**4.3. Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream as it may scatter and spread fire.

**5.2. Special hazards arising from the substance or mixture** By heating and fire, harmful vapours/gases may be formed.  
Toxic fumes.

#### 5.3. Advice for firefighters

<b>Special protective equipment for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Wear appropriate personal protective equipment.

**For emergency responders** Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Eliminate sources of ignition.

Large Spills: Stop the flow of material, if this is without risk. Dam the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Provide adequate ventilation. Use adequate ventilation when this product is heated at approximately 150 °C (300 °F) and above in the presence of air. Use care in handling/storage. Do not breathe mist or vapour. Avoid prolonged exposure.

**7.2. Conditions for safe storage, including any incompatibilities** Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Keep in original container.

**7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Occupational exposure limits** No exposure limits noted for ingredient(s).

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

**Recommended monitoring procedures** Not available.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

### 8.2. Exposure controls

**Appropriate engineering controls** Provide adequate general and local exhaust ventilation. Provide eyewash station.

#### Individual protection measures, such as personal protective equipment

**General information** Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection** Tightly sealed safety glasses according to EN 166.

**Skin protection**

**- Hand protection** Wear protective gloves.

**- Other** Wear suitable protective clothing.

**Respiratory protection** If ventilation is insufficient when heating use chemical respirator with organic vapor cartridge.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practices. This product can generate formaldehyde at approximately 150 °C (300 °F) and above in the presence of air. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential cancer hazard. So, use adequate ventilation or wear protective equipment such as gloves, goggles, organic vapor respirator or protective clothing when this product is heated at approximately 150 °C (300 °F) and above in the presence of air.

<b>Environmental exposure controls</b>	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.
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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Colour</b>	Brown.
<b>Odour</b>	Odorless
<b>Melting point/freezing point</b>	No data
<b>Boiling point or initial boiling point and boiling range</b>	No data
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower ( % )</b>	No data
<b>Explosive limit – upper ( % )</b>	No data
<b>Flash point</b>	> 94 °C (> 201,2 °F) Closed cup > 300 °C (> 572 °F) Open cup
<b>Auto-ignition temperature</b>	No data
<b>Decomposition temperature</b>	Not available.
<b>pH</b>	Not measurable (Refer to water solubility)
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not soluble
<b>Partition coefficient (n-octanol/water)</b>	No data
<b>Vapour pressure</b>	Negligible ( 25 °C )
<b>Vapour density</b>	Not applicable
<b>Relative density</b>	0,98 ( 25 °C )
<b>Particle characteristics</b>	Not available.

### 9.2. Other information

**9.2.1. Information with regard to physical hazard classes** No relevant additional information available.

### 9.2.2. Other safety characteristics

<b>Evaporation rate</b>	Negligible (Butyl Acetate=1)
<b>Molecular weight</b>	No data
<b>Viscosity</b>	1000 mm <sup>2</sup> /s ( 25 °C )

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	No hazardous reaction known under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Stable at normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	Hazardous polymerisation does not occur.
<b>10.4. Conditions to avoid</b>	None known.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde .

## SECTION 11: Toxicological information

<b>General information</b>	Not available.
<b>Information on likely routes of exposure</b>	
<b>Inhalation</b>	No significant effects are expected.

<b>Skin contact</b>	No significant effects are expected.
<b>Eye contact</b>	No significant effects are expected.
<b>Ingestion</b>	No significant effects are expected.
<b>Symptoms</b>	Not available.

### 11.1. Information on toxicological effects

**Acute toxicity** None known.

Components	Species	Test Results
Octamethylcyclotetrasiloxane (CAS 556-67-2)		
<b>Acute</b>		
<b>Inhalation</b>		
<i>Vapour</i>		
LC50	Rat	> 5000 mg/m <sup>3</sup> , 4 hours
<b>Oral</b>		
<i>Liquid</i>		
LD50	Rat	> 5000 mg/kg
<b>Skin corrosion/irritation</b>	SKIN-RABBIT : 500mg/24hr MILD [Octamethylcyclotetrasiloxane]	
<b>Serious eye damage/eye irritation</b>	EYE-RABBIT : MILD [Octamethylcyclotetrasiloxane]	
<b>Respiratory sensitisation</b>	Not available.	
<b>Skin sensitisation</b>	No evidence of sensitization. [Octamethylcyclotetrasiloxane]	
<b>Germ cell mutagenicity</b>	Negative(Bacteria) [Octamethylcyclotetrasiloxane]	
<b>Carcinogenicity</b>		

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Not listed.

**Reproductive toxicity** Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. [Octamethylcyclotetrasiloxane]

**Specific target organ toxicity - single exposure** Not available.

**Specific target organ toxicity - repeated exposure** Repeated inhalation or oral exposure of mice and rats to octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs/day, 5days/week for up to 104weeks to 0, 10, 30, 150 or 700ppm of octamethylcyclotetrasiloxane. The increase in incidence of (uterine)endometrial cell hyperplasia and uterine adenomas(benign tumors) were observed in female rats at 700ppm. Since these effects only occurred at 700ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing octamethylcyclotetrasiloxane would result in a significant risk to humans. [Octamethylcyclotetrasiloxane]

**Aspiration hazard** Not available.

**Mixture versus substance information** Not available.

### 11.2. Information on other hazards

**Endocrine disrupting properties** The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Other information**

This product can generate formaldehyde at approximately 150 °C (300 °F) and above in the presence of air. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential cancer hazard. So, use adequate ventilation or wear protective equipment such as gloves, goggles, organic vapor respirator or protective clothing when this product is heated at approximately 150 °C (300 °F) and above in the presence of air.

**SECTION 12: Ecological information****12.1. Toxicity**

No acute effects up to solubility limit.

Very toxic to aquatic life with long lasting effects. Not partitioned to water to cause adverse effect to aquatic organisms. [Octamethylcyclotetrasiloxane]

Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

Components		Species	Test Results
Octamethylcyclotetrasiloxane (CAS 556-67-2)			
Aquatic			
Acute			
Algae	ErC10	Pseudokirchneriella subcapitata	>= 22 µg/l, 96 h
	ErC50	Pseudokirchneriella subcapitata	> 22 µg/l, 96 h
Crustacea	EC50	Daphnia magna	> 15 µg/l, 48 h
	LC50	Americamysis bahia	> 9,1 µg/l, 96 h
Fish	LC50	Cyprinodon variegatus	> 6,3 µg/l, 14 d
			6,3 µg/l, 96 h
	NOEC	Oncorhynchus mykiss	> 22 µg/l, 96 h
			10 µg/l, 14 d
		Cyprinodon variegatus	> 63 µg/l, 14 d
	Oncorhynchus mykiss	4,4 µg/l, 14 d	
Chronic			
Crustacea	NOEC	Daphnia magna	>= 15 µg/l, 21 d
Fish	NOEC	Oncorhynchus mykiss	>= 4,4 µg/l, 93 d fish early life stage toxicity

**12.2. Persistence and degradability**

No data available.

**Photolysis****Half-Life (Photolysis-Atmospheric)**

Octamethylcyclotetrasiloxane 15,8 days, indirect photolysis

**Hydrolysis****Half-Life (Hydrolysis)**

Octamethylcyclotetrasiloxane 0,9 - 1 h (pH9; 25°C)  
1,8 h (pH4; 25°C)  
69,3 - 144 h (pH7; 25°C)

**Biodegradability****Percent Degradation (Aerobic Biodegradation-Ready)**

Octamethylcyclotetrasiloxane OECD 301, Not readily biodegradable.

**Percent Degradation (Aerobic Biodegradation-Soil)**

Octamethylcyclotetrasiloxane 0,04 days Half-life in soil, at 22 °C in tropical Wahiawa soil in closed system.

**12.3. Bioaccumulative potential**

The substance does not biomagnify in food-webs.

Trophic Magnification Factor (TMF) < 1 (field studies)

[Octamethylcyclotetrasiloxane]

**Partition coefficient****n-octanol/water (log Kow)**

Octamethylcyclotetrasiloxane 6,49 ( 25,1 °C )

**Bioconcentration factor (BCF)**

Octamethylcyclotetrasiloxane 12400  
Species: Fathead minnow (Pimephales promelas)

**12.4. Mobility in soil**

No data available.

**Mobility in soil****Adsorption****Soil/Sediment Sorption - Log Koc**

Octamethylcyclotetrasiloxane 4,22, average

**Desorption****Soil/sediment desorption - Log Kd**

Octamethylcyclotetrasiloxane 4,3, average

**Mobility in general** No data available.**Volatility****Henry's law**

Octamethylcyclotetrasiloxane Log Kaw = 2,69, indicating high potential of volatilization from water.

**12.5. Results of PBT and vPvB assessment** Not available.**12.6. Endocrine disrupting properties** The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.**12.7. Other adverse effects** Not available.**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Residual waste** 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** Since emptied containers may retain product residue, follow label warnings even after container is emptied.**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.**Disposal methods/information** Incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator. Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations.**SECTION 14: Transport information****ADR**

14.1. - 14.6.: Not regulated as dangerous goods.

**RID**

14.1. - 14.6.: Not regulated as dangerous goods.

**ADN**

14.1. - 14.6.: Not regulated as dangerous goods.

**IATA**

14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG**

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Maritime transport in bulk according to IMO instruments** This product is not intended to be transported in bulk.**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**  
Not listed.**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

**Authorisations****Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Restrictions on use****Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

**Other EU regulations****Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

**Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**National regulations**

Follow national regulation for work with chemical agents.

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other information****List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
 AICIS: Australian Inventory of Industrial Chemicals.  
 CEN: European Committee for Standardization.  
 IMDG: International Maritime Dangerous Goods.  
 MAC: Maximum Allowed Concentration.  
 PBT: Persistent, bioaccumulative and toxic.  
 RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
 STEL: Short term exposure limit.  
 VLE: Exposure Limit Value.  
 VME: Exposure Average Value.  
 vPvB: Very persistent and very bioaccumulative.  
 IATA: International Air Transport Association.  
 MARPOL: International Convention for the Prevention of Pollution from Ships.  
 IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.  
 CAS: Chemical Abstract Service.  
 TWA: Time Weighted Average.  
 AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).  
 TLV: Threshold Limit Value.

**References**

Not available.

**Information on evaluation method leading to the classification of mixture**

Not applicable.

**Full text of any H-statements not written out in full under Sections 2 to 15**

H226 Flammable liquid and vapour.  
 H361f Suspected of damaging fertility.  
 H410 Very toxic to aquatic life with long lasting effects.



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**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.