

1. Identification

Product identifier	GEC - 5
Other means of identification	
Sales Code	1633S0
Recommended use	Fluids, Modified silicone fluids Cleaning agent , Dispersant , Paint additive
Recommended restrictions	Industrial use only.
Manufacturer/Importer/Supplier/Distributor information	
Name	Shin-Etsu Silicones of America, Inc.
Address	1150 Damar Drive, Akron, OH 44305 USA
Contact	Regulation compliance group
Telephone Number	+1-330-630-9860
Fax Number	+1-330-630-9855
Emergency Phone Number	Chemtrec: +1-800-424-9300 (Within US) Chemtrec: +1-703-527-3887 (Outside US)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Not classified.	
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

Label elements

Hazard symbol	None.
Signal word	Warning
Hazard statement	Combustible liquid.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	In case of fire : Use water fog, foam, dry chemical powder or carbon dioxide(CO2) to extinguish.
Storage	Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.
HMIS® ratings	Health: 1 Flammability: 2 Physical hazard: 0

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Decamethylcyclopentasiloxane		541-02-6	100

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash skin with soap and water. Get medical attention if irritation develops and persists.

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Eye contact	Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike 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.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Provide adequate ventilation. Use care in handling/storage. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke. Do not breathe mist or vapor. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight. Keep in original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. Workplace Environmental Exposure Level (WEEL) Guides

Material	Type	Value
Decamethylcyclopentasiloxane (CAS 541-02-8)	TWA	10 ppm

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as 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	In case of insufficient ventilation, wear suitable respiratory equipment. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Form	Liquid.
Color	Colorless. Clear.
Odor	Slight odor.
Odor threshold	Not available.
pH	Not measurable (Refer to water solubility)
Melting point/freezing point	-36.4 °F (-38 °C)
Initial boiling point and boiling range	410 °F (210 °C)
Flash point	180.9 °F (82.7 °C) ASTM D 3828-87
Evaporation rate	< 1 (Butyl Acetate=1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.45 % v/v measured at 443.15K (ASTM E 681-94)
Flammability limit - upper (%)	13.21 % v/v measured at 443.15K (ASTM E 681-94)
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	33.2 Pa (25 °C)
Vapor density	> 1 (air=1)
Relative density	0.96 (25 °C)
Solubility(ies)	
Solubility (water)	17 µg/l
Partition coefficient (n-octanol/water)	8.02 (25.3 °C)
Auto-ignition temperature	701.6 °F (372 °C) 101.3 kPa (ASTM E 569-78)
Decomposition temperature	Not available.
Viscosity	3.7 mm ² /s (25 °C)
Other information	
Explosive properties	Not explosive.
Molecular weight	370.8
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.

Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	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. Formaldehyde .

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Decamethylcyclopentasiloxane (CAS 541-02-6)		
<u>Acute</u>		
<u>Dermal</u>		
LD50	Rabbit	> 2000 mg/kg bw/day (comparable to OECD 402)
<u>Inhalation</u>		
LC50	Rat	8670 mg/m ³ (comparable to OECD 403)
<u>Oral</u>		
LD50	Rat	> 5000 mg/kg (comparable to the now deleted OECD 401)
<u>Chronic</u>		
<u>Inhalation</u>		
NOAEC	Rat	>= 160 ppm, 2 years (equivalent to OECD 453)
<u>Subacute</u>		
<u>Dermal</u>		
NOAEL	Rat	>= 1600 mg/kg, 28 days (equivalent or similar to OECD 410)
<u>Subchronic</u>		
<u>Oral</u>		
NOAEL	Rat	>= 1000 mg/kg bw/day, 90 days (OECD 408)

Skin corrosion/irritation Not irritating, Skin-Rabbit: Primary dermal irritation index = 0.

Serious eye damage/eye irritation Not irritating, Eye-Rabbit: Overall irritation score: 0 of max. 0

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	Not sensitizing (LLNA).

Germ cell mutagenicity Bacterial reverse mutation assay: Negative (OECD 471).
Cytogenicity in mammalian cells: Negative in Chinese hamster V79 cells (OECD 473).
Mutagenicity in mammalian cells: Negative in L5178Y mouse lymphoma cells (similar to OECD TG 476).
Micronucleus Test (Rat): Negative (OECD 474).
Unscheduled DNA synthesis (rats): Negative (OECD 486).

Carcinogenicity No carcinogenic effects relevant to humans in a two-year inhalation combined chronic toxicity and carcinogenicity study in rats. (EPA OPPTS 870.4300)

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	NOAEL (P): >= 160 ppm, NOAEL (F1): >= 160 ppm, NOAEL (F2) : > 160 ppm (Two-generation reproductive toxicity study, EPA OPPTS 870.3800 and EPA OPP 83-6).
Specific target organ toxicity - single exposure	Not classified for specific target organ toxicity - single exposure, based on the available data.
Specific target organ toxicity - repeated exposure	Repeated inhalation or oral exposure of mice and rats to decamethylcyclpentasiloxane 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.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
Decamethylcyclpentasiloxane (CAS 541-02-6)			
Aquatic			
Algae	EC50	Pseudokirchneriella subcapitata	> 12 µg/l, 72 hr
	NOEC	Pseudokirchneriella subcapitata	> 12 µg/l
Crustacea	EC50	Daphnia magna	> 2.9 µg/l, 48 hr
	NOEC	Daphnia magna	>= 15 µg/l, 21 day study : reproduction and growth
Fish	LC50	Oncorhynchus mykiss	> 16 µg/l, 96 hr
	NOEC	Oncorhynchus mykiss	>= 14.4 µg/l, 90 day study: fish early life-stages

Persistence and degradability Not available.**Photolysis****Half-life (Photolysis-atmospheric)**

10.4 days, indirect photolysis

Hydrolysis**Half-life (Hydrolysis)**

73.4 days (pH 7 and 25 °C)

Biodegradability**Percent degradation (Aerobic biodegradation-ready)**

OECD 301, Not readily biodegradable.

Percent degradation (Aerobic biodegradation-soil)

0.08 days Half-life in soil, at 22°C in tropical Wahiawa soil in closed system

Bioaccumulative potential The substance does not biomagnify in food-webs.
Trophic Magnification Factor (TMF) < 1 (field studies)**Partition coefficient n-octanol / water (log Kow)**

8.02 (25.3 °C)

Bioconcentration factor (BCF)

16200 lipid-normalized, kinetic

Species: Pimephales promelas

Mobility in soil**Adsorption****Soil/sediment sorption - log Kd**

5.34, average

Soil/sediment sorption - log Koc

5.17, average

Mobility in general**Volatility****Henry's law**

3.13, indicating high potential of volatilization from water.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Follow applicable Federal, State and Local regulations.

14. Transport information

DOT

UN number	NA1993
UN proper shipping name	Combustible liquid, n.o.s. (Decamethylcyclopentasiloxane)
Transport hazard class(es)	
Class	Combustible liq
Subsidiary risk	-
Label(s)	None
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, T1, T4, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	241

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is not intended to be transported in bulk.**DOT**

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 313 (TRI reporting)**

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.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Decamethylcyclopentasiloxane (CAS 541-02-6)

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)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date	12-03-2014
Revision date	10-17-2018
Version #	07
HMIS® ratings	Health: 1 Flammability: 2 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 2 Instability: 0

NFPA ratings



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.

Revision information

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

Also identified by manufacturer as KF-995