SAFETY DATA SHEET

1. Identification

Product identifier: TEGO® Flow ATF 2

Chemical name: Polydimethylsiloxane

Other means of identification

Recommended use: Industrial use

Recommended restrictions: None known.

Manufacturer/Importer/Distributor Information

Company Name	:	Evonik Operations GmbH Rellinghauser Str. 1-11 45128 Essen Germany
Telephone	:	+49 201 173 01
Fax	:	+49 201 173 3000
E-mail	:	productsafety-cs@evonik.com

Emergency telephone number:

24-Hour Health Emergency	:	+49 2365 49 2232 +49 2365 49 4423 (Fax)

2. Hazard(s) identification

Classification according to GHS

Physical Hazards

Flammable liquids	Category 2

Health Hazards

Acute toxicity (Dermal)	Category 5
Toxic to reproduction	Category 2

Environmental Hazards

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol:

Signal Word:	Danger
Hazard Statement:	Highly flammable liquid and vapor. May be harmful in contact with skin. Suspected of damaging fertility. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response:	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Call a POISON CENTER or doctor/ physician if you feel unwell. IF exposed or concerned: Get medical advice/attention.
Storage:	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards: None known.

3. Composition/information on ingredients

Chemical name:
Polydimethylsiloxane

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Decamethylcyclopentasiloxane	No data available.	541-02-6	10 - <30%
Hexamethyl disiloxane	No data available.	107-46-0	<10%
octamethylcyclotetrasiloxane	No data available.	556-67-2	<0,3%

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

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: Remove soiled or soaked clothing immediately

Inhalation: fresh air supply, consult a doctor if feeling unwell.

Skin Contact: In case of contact with skin wash off with soap and water. In case of discomfort: Supply with medical care.

Eye contact: In case of contact with eyes rinse thoroughly with water. In case of discomfort: Supply with medical care.

Ingestion: Thoroughly clean the mouth with water In case of discomfort: Supply with medical care.

Personal Protection for First-aid Responders: No data available.

Most important symptoms and effects, both acute and delayed

Symptoms: Up to now no symptoms are known.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: foam, carbon dioxide, dry powder, water spray.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture:	In the event of fire the following can be released: - Carbon monoxide, carbon dioxide, silicon dioxide Under certain conditions of combustion traces of other toxic substances cannot be excluded

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures:	Keep away from sources of ignition. Take action to prevent static discharges. Vapours may form explosive mixtures with air. Cool endangered containers by water spray
Special protective equipment for fire-fighters:	Do not inhale explosion and/or combusition gases. Self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep away sources of ignition. Ensure adequate ventilation.
Accidental release measures:	No data available.
Methods and material for containment and cleaning up:	Take up with absorbent material (eg sand, kieselguhr, universal binder) Dispose of absorbed material in accordance with the regulations.
Environmental Precautions:	Do not allow to enter drains or waterways Prevent product from getting into subsoil/soil.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	No data available.
Safe handling advice:	Avoid contact with skin and eyes. Do not inhale gases/vapours/aerosols.Provide good ventilation of working area (local exhaust ventilation if necessary). Use respiratory protection during spraying.
Contact avoidance measures:	No data available.

Storage

Safe storage conditions:	Keep container tightly closed in a cool, well-ventilated place.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Observe national threshold limit values.

Biological Limit Values

Observe national threshold limit values.

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: No data available.

Eye/face protection: Safety goggles

Skin Protection

Hand Protection: Material: Nitrile rubber.
Break-through time: 480 min
Glove thickness: 0,2 mm

Other: protective clothing

Respiratory Protection: in case of formation of vapours/aerosols: Short term: filter apparatus, combination filter A-P2

Hygiene measures: When using do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Remove soiled or soaked clothing immediately.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	specific to the product
Odor Threshold:	not measured
Freezing point:	not measured
Boiling Point:	> 194 °F/> 90 °C
Flammability:	not measured

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	not measured
Explosive limit - lower:	not measured
Flash Point:	46 - 61 °F/8 - 16 °C (DIN EN ISO 2719)
Self Ignition Temperature:	not measured
Decomposition Temperature:	not measured
pH:	Not applicable

Viscosity

Dynamic viscosity:	32 - 38 mPa.s (77 °F/25 °C, DIN 53015)
Kinematic viscosity:	32 - 38 mm2/s

Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	Insoluble
Solubility (other):	not measured
Partition coefficient (n-octanol/water):	not measured
Vapor pressure:	not measured
Relative density:	not measured
Density:	0,92 - 0,94 g/cm3 (77 °F/25 °C) (DIN 51757)
Bulk density:	No data available.
Relative vapor density:	not measured

Other information

Explosive properties:	not measured
Oxidizing properties:	not oxidizing
Minimum ignition temperature:	not measured
Metal Corrosion:	Not corrosive to metals
Evaporation Rate:	not measured

10. Stability and reactivity

Reactivity:	see section "Possibility of hazardous reactions".
Chemical Stability:	The product is stable under normal conditions.
Possibility of hazardous reactions:	No hazardous reactions with proper storage and handling
Conditions to avoid:	Open flames, sparks or input of much heat
Incompatible Materials:	Not known.
Hazardous Decomposition Products:	None with proper storage and handling.

11. Toxicological information

Information on toxicological effects

Information on likely routes of exposure

Inhalation:	Information on effects are given below.
Skin Contact:	Information on effects are given below.
Eye contact:	Information on effects are given below.
Ingestion:	Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	LD 50 (Rat): > 5.000 mg/kg
Hexamethyl disiloxane	LD 50 (Rat): > 12.160 mg/kg
octamethylcyclotetrasiloxane	LD 50 (Rat): > 5.000 mg/kg

Dermal

Product:	LD 50 (ATEmix): 2.248 mg/kg
Components:	
Decamethylcyclopentasiloxane	LD 50 (Rat): > 2.000 mg/kg
Hexamethyl disiloxane	No classification
octamethylcyclotetrasiloxane	LD 50 (Rat): > 5.000 mg/kg

Inhalation

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	LC 50 (Rat, 4 h): 8,67 mg/l Dusts, mists and fumes Vapour, No data available.
Hexamethyl disiloxane	LC 50 (Rat, 4 h): 106 mg/l Vapour Not applicable, Dusts, mists and fumes
octamethylcyclotetrasiloxane	LC 50 (Rat, Female, Male, 4 h): 36 mg/l Vapour Dusts, mists and fumes, No data available.

Repeated dose toxicity

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	NOAEL (Rat, Oral, 7 days a week): 1.000 mg/kg Subchronic toxicity NOAEL (Rat, Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 160 mg/l chronic NOAEL (Rat, Dermal, 5 days/weeks, 6 hours/day): 1.600 mg/kg Subacute toxicity
Hexamethyl disiloxane	NOAEL (Rat(Female, Male), Oral, 28 d, 7 days a week): 160 mg/kg NOAEL (Rat(Female, Male), Dermal, 28 d, 5 days/weeks, 6 hours/day): >= 1.000 mg/kg NOAEC (Rat(Female, Male), Inhalation - vapor, 7 days a week): > 2500 mg/m³
octamethylcyclotetrasiloxane	NOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 1,8 mg/l Subchronic toxicity LOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 8,5 mg/l chronic NOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 0,36 mg/l Subacute toxicity

Skin Corrosion/Irritation

Product:	No data available.
Components:	

Decamethylcyclopentasiloxane	OECD 404 (Rabbit): Not irritating
Hexamethyl disiloxane	OECD 404 (Rabbit): Not irritating
octamethylcyclotetrasiloxane	OECD 404 (Rabbit): Not irritating

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	OECD 405 (Rabbit): Not irritating
Hexamethyl disiloxane	OECD 405 (Rabbit): Not irritating
octamethylcyclotetrasiloxane	OECD 405 (Rabbit): Not irritating

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Not a skin sensitizer. Buehler Test (Rabbit): Not a skin sensitizer.
Hexamethyl disiloxane	Patch test (Human): Not a skin sensitizer.
octamethylcyclotetrasiloxane	Magnussona i Kligmana., OECD 406 (Rabbit): Not a skin sensitizer. Sensitization test (Human): Not a skin sensitizer. Maximization Test, OECD 406 (Guinea Pig): Not a skin sensitizer.

Carcinogenicity

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No evidence that cancer may be caused.
octamethylcyclotetrasiloxane	No data available.

Germ Cell Mutagenicity

No data available.

In vitro

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	Ames test (OECD 471): negative gene mutation test (OECD 476): negative Chromosomal aberration (OECD 473): negative DNA damage and/or repair: negative
Hexamethyl disiloxane	Ames test (OECD 471): negative Chromosomal aberration (OECD 473): negative gene mutation test (OECD 476): negative
octamethylcyclotetrasiloxane	Ames test (OECD 471): negative Chromosomal aberration (OECD 473): negative gene mutation test (OECD 476): negative

In vivo

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	Micronucleus test (OECD 474) Inhalation (Rat, Female, Male): negative unscheduled DNA synthesis assay (OECD 486) Inhalation (Rat, Female, Male): negative
Hexamethyl disiloxane	Chromosomal aberration (OECD 475) Intraperitoneal (Rat, Male): negative
octamethylcyclotetrasiloxane	Micronucleus test (OECD 474) Inhalation - vapor (Rat): negative Chromosomal aberration (OECD 478) Oral (Rat): negative Chromosomal aberration (OECD 475) Inhalation - vapor (Rat, Female, Male): negative

Reproductive toxicity

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	Inhalation - vapor
Hexamethyl disiloxane	no evidence of reproductiontoxic properties Inhalation - vapor
octamethylcyclotetrasiloxane	Suspected of damaging fertility or the unborn child. Suspected of damaging fertility.

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Aspiration Hazard

Product:	Not classified
Components:	
Decamethylcyclopentasiloxane	Not classified
Hexamethyl disiloxane	Not classified
octamethylcyclotetrasiloxane	Not classified

Information on health hazards

Other hazards

Product:	No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	LC 50 (Leuciscus idus, 96 h): > 3.000 mg/l LC 0 (Leuciscus idus, 96 h): 200 mg/l
Hexamethyl disiloxane	LC 50 (Oncorhynchus mykiss, 96 h): 3,02 mg/l NOEC (Oncorhynchus mykiss, 96 h): 0,28 mg/l
octamethylcyclotetrasiloxane	LC 50 (Oncorhynchus mykiss, 96 h): > 22 µg/l NOEC (Oncorhynchus mykiss, 96 h): 22 µg/l

Aquatic Invertebrates

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	EC 50 (Daphnia magna, 48 h): > 0,37 mg/l
octamethylcyclotetrasiloxane	NOEC (Daphnia magna, 48 h): 15 µg/l EC 50 (Daphnia magna, 48 h): > 15 µg/l

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	EC 50 (Algae (Pseudokirchneriella subcapitata), 95 h): > 0,55 mg/l (OECD 201)
octamethylcyclotetrasiloxane	EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): > 22 µg/l (US-EPA-method) EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): > 22 µg/l (US-EPA-method)

Toxicity to microorganisms

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	EC 50 (activated sludge, 3 h): > 100 mg/l (OECD 209) NOEC (activated sludge, 3 h): 100 mg/l (OECD 209)
octamethylcyclotetrasiloxane	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	

Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	NOEC (Oncorhynchus mykiss, 93 d): 4,4 µg/l (US-EPA-method)

Aquatic Invertebrates

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	NOEC (Daphnia magna, 21 d): 0,25 mg/l (OECD 211) LC 50 (Daphnia magna, 21 d): 0,45 mg/l (OECD 211)
octamethylcyclotetrasiloxane	NOEC (Daphnia magna, 21 d): 15 µg/l (EPA OTS 797.1330) Lowest Observed Effect Concentration (Daphnia magna, 21 d): 15 µg/l (EPA OTS 797.1330) EC 50 (Daphnia magna, 21 d): > 15 µg/l (EPA OTS 797.1330)

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	NOEC (Algae (Pseudokirchneriella subcapitata), 96 h): 1 mg/l (OECD 201)
octamethylcyclotetrasiloxane	NOEC (Algae (Pseudokirchneriella subcapitata), 96 h): < 22 µg/l (US-EPA-method)

Toxicity to microorganisms

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	EC 50 (activated sludge, 3 h): > 100 mg/l (OECD 209) NOEC (activated sludge, 3 h): 100 mg/l (OECD 209)
octamethylcyclotetrasiloxane	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	0 % (28 d, OECD 310) The product is not biodegradable., aerobic
Hexamethyl disiloxane	2 % (28 d, OECD 301 C) The product is not biodegradable., aerobic
octamethylcyclotetrasiloxane	3,7 % (28 d, OECD 310) The product is not biodegradable., aerobic

BOD/COD Ratio

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.

Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	Log Kow: not measured
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	Log Kow: 6,488 25,1 °C (OECD 123)

Mobility in soil:

Product	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Product	No data available.
Components:	
Decamethylcyclopentasiloxane	No data available.
Hexamethyl disiloxane	No data available.
octamethylcyclotetrasiloxane	No data available.

Other adverse effects:

Other hazards

Product:	Do not allow to enter soil, waterways or waste water canal. Based on expert judgement and on experimental data within an analogue approach, the maximum estimated aqueous concentration of typical impurities of siloxane polymers, migrating into water is below their established no-effect threshold value for aquatic organisms.

13. Disposal considerations

Disposal methods:	In accordance with local authority regulations, take to special waste incineration plant

Contaminated Packaging: If empty contaminated containers are recycled or disposed of, the receiver must be informed about possible hazards.

14. Transport information

International Regulations

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (hexamethyldisiloxane)
Class	:	3
Packing group	:	II
Labels	:	3
Packing instruction (cargo aircraft)	:	364
Packing instruction (passenger aircraft)	:	353

IMDG-Code

UN number or ID number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (hexamethyldisiloxane)
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information

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

Issue Date: 04.03.2019

Version #: 1.2

Further Information: No data available.

Revision Information: Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Disclaimer:

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.