

SAFETY DATA SHEET

REPLISET-F1, -F5, -T1, -T3, -GF1, -GT1 - Part A



Section 1. Identification

Product identifier : REPLISET-F1, -F5, -T1, -T3, -GF1, -GT1 - Part A
Cat. No. : 40900046, 40900047, 40900048, 40900049, 40900050, 40900051, 40900052, 40900053, 40900068, 40900069, 40900070, 40900071, 40900076, 40900077, 40900078, 40900079
Container size : 50 ml
Other means of identification : Not available.
Product type : Liquid.

Recommended use of the chemical and restrictions on use

Product use : Replication system for materialographic surfaces.
Area of application : Professional applications.

Supplier's details : Struers ApS
Pederstrupvej 84
DK-2750 Ballerup

Telephone: +45 44 600 800

e-mail address of person responsible for this SDS : sdsquestions@struers.dk
Emergency telephone number (with hours of operation) : +45 44 600 800 (Only during office hours)

Section 2. Hazards identification

Classification of the substance or mixture : H373 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 49.5%

GHS label elements

Hazard pictograms :



Signal word : Warning
Hazard statements : H373 - May cause damage to organs through prolonged or repeated exposure. (lungs)
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Date of issue/Date of revision : 2026/03/20 **Date of previous issue** : 2025/01/13 **Version** : 2.01 1/13



Section 2. Hazards identification

- Prevention** : P273 - Avoid release to the environment.
P260 - Do not breathe vapour.
- Response** : P319 - Get medical help if you feel unwell.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

Ingredient name	%	Identifiers
Silaneamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	≥20 - <50	CAS: 68909-20-6
octamethylcyclotetrasiloxane	<0.1	CAS: 556-67-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.



Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : Defatting to the skin. May cause skin dryness and irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
 irritation
 dryness
 cracking
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam, dry chemical or CO₂.
Unsuitable extinguishing media : Do not use water jet.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.



Section 5. Firefighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage

Precautions for safe handling



Section 7. Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection



Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: Nitrile gloves. (thickness: 1.25 mm), Neoprene gloves. (thickness: 0.198 mm). It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid. [Viscous.]
- Colour** : Black./Grey.
- Odour** : Slight.
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Closed cup: >150°C (>302°F) [Afnor T 60103]
- Evaporation rate** : Not available.
- Flammability** : Not considered to be flammable .
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapour pressure** : Not available.
- Relative vapour density** : Not available.
- Relative density** : 1.12 [at 20°C]
- Solubility(ies)** :
- | Media | Result |
|-------|-------------|
| water | Not soluble |
- Miscible with water** : No.



Section 9. Physical and chemical properties and safety characteristics

Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: 400°C (752°F)
Decomposition temperature	: >200°C (>392°F)
Viscosity	: Dynamic (room temperature): Not available. Kinematic (room temperature): 18000 mm ² /s (18000 cSt) Kinematic (40°C (104°F)): Not available.
Flow time (ISO 2431)	: Not available.
<u>Particle characteristics</u>	
Median particle size	: Not applicable.
<u>Other information</u>	
Physical/chemical properties comments	: No additional information.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Hazardous reactions or instability may occur under certain conditions of storage or use. Hazardous polymerization may occur under certain conditions of storage or use. Product may release hydrogen gas – increased storage temperatures will accelerate this process. (<4 l/kg - Product).
Conditions to avoid	: Avoid high temperatures. Keep away from open flames.
Incompatible materials	: Reactive or incompatible with the following materials: oxidising materials and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
Octamethylcyclotetrasiloxane	Rat - Inhalation - LC50 Vapour >36 mg/l [4 hours]

Conclusion/Summary[Product] : Not available.

Skin corrosion/irritation



Section 11. Toxicological information

Product/ingredient name
 Octamethylcyclotetrasiloxane

Result
Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Conclusion/Summary[Product]

: Not available.

Serious eye damage/eye irritation
Conclusion/Summary[Product]

: Not available.

Respiratory corrosion/irritation
Conclusion/Summary[Product]

: Not available.

Respiratory or skin sensitization
Product/ingredient name
 Octamethylcyclotetrasiloxane

Result
Guinea pig - skin
Result: Not sensitizing

OECD 406 [Skin Sensitization]

Skin
Conclusion/Summary[Product]

: Not available.

Respiratory
Conclusion/Summary[Product]

: Not available.

Germ cell mutagenicity
Product/ingredient name
 Octamethylcyclotetrasiloxane

Result
In vitro - Bacteria
Result: Negative

In vitro - Mammalian-Animal
Result: Negative

In vivo - Mammalian-Animal
Result: Negative

In vivo - Mammalian-Animal
Result: Negative

In vitro - Mammalian-Animal
Result: Negative

OECD 471 [Bacterial Reverse Mutation Test]

OECD 473 [In vitro Mammalian Chromosomal Aberration Test]

OECD 475 [Mammalian Bone Marrow Chromosomal Aberration Test]

OECD 478 [Genetic Toxicology: Rodent Dominant Lethal Test]

OECD 476 [In vitro Mammalian Cell Gene Mutation Test]

Conclusion/Summary[Product]

: Not available.

Carcinogenicity
Conclusion/Summary[Product]

: Not available.



Section 11. Toxicological information

Reproductive toxicity

Product/ingredient name	Result	
Octamethylcyclotetrasiloxane	Rat - Inhalation 3.64 mg/kg - NOAEL Fertility effects: Positive <u>Developmental</u> : Negative	OECD 416 [Two-Generation Reproduction Toxicity Study]

Conclusion/Summary[Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Silaneamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (lungs) (inhalation) - Category 2

Aspiration hazard

Not available.

Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Defatting to the skin. May cause skin dryness and irritation.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.



Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name

Octamethylcyclotetrasiloxane

Result

Sub-acute - Rabbit - Dermal - NOAEL
960 mg/kg

OECD 410 [Repeated Dose Dermal Toxicity: 21/28-day Study]

Conclusion/Summary[Product] : Not available.

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

N/A

Section 12. Ecological information

Toxicity

Product/ingredient name

Octamethylcyclotetrasiloxane

Result

Chronic - NOEC - Fresh water

Effect: Multiple

Fish - Rainbow trout, donaldson trout -
Oncorhynchus mykiss - Egg

Age: 2 hours

4.4 µg/l [90 days]

Acute - LC50

Fish - *Oncorhynchus mykiss*

>0.022 mg/l [96 hours]

Chronic - NOEC

Fish - *Oncorhynchus mykiss*

≥0.0044 mg/l [93 days]

Chronic - NOEC

Daphnia - *Daphnia magna*

0.015 mg/l [21 days]

Acute - EC50

Algae - *Selenastrum capricornutum*

>0.022 mg/l [96 hours]



Section 12. Ecological information

Chronic - NOEC - Fresh water Effect: Mortality

Daphnia - Water flea - *Daphnia magna*

Age: <24 hours

7.9 µg/l [21 days]

Acute - EC50 - Fresh water

Daphnia - *Daphnia magna*

>0.015 mg/l [48 hours]

Chronic - NOEC

Algae - Green algae - *Selenastrum capricornutum*

1 to 29 µg/l [96 hours]

Effect: Population

STDMETH

Conclusion/Summary[Product] : Not available.

Persistence and degradability

Product/ingredient name

Octamethylcyclotetrasiloxane

Result

Aerobic - 10 mg/l

3.7% [28 days] - Not readily

OECD [Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)]

Conclusion/Summary[Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
octamethylcyclotetrasiloxane	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Octamethylcyclotetrasiloxane	6.488	13400 [EPA OTS 797.1520]	High

Mobility in soil

Soil/water partition coefficient

: Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff



Section 13. Disposal considerations

and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.



Section 16. Other information

History

Date of issue/Date of revision	: 2026/03/20
Date of previous issue	: 2025/01/13
Version	: 2.01
Prepared by	: Sphera Solutions
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods IMO = International Maritime Organization LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

Procedure used to derive the classification

Classification	Justification
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method

References : GHS - Globally Harmonised System of Classification and Labelling of Chemicals - Version : 9.
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

