Safety Data Sheet

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

FluoST3

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

Laboratory Chemical

1.3 Details of the supplier of the safety data sheet

Emulseo
Parc AMPeRIS, Bâtiment BAYA, 8 rue Adrienne Bolland
33600 Pessac
France
contact@emulseo.com

1.4 Emergency telephone number

In case of emergency: +33(0) 5 35 54 10 06

Section 2: Hazards identification

2.1 Classification of the substances or mixture

Classification according to regulation (EC) no. 1272/2008 [CLP/GHS]
Not Classified

2.2 Label elements

Not applicable

2.3 Other hazards

Thermal decomposition can lead to release of toxic and corrosive gases.

Section 3: Composition

3.1 Substances

Not Applicable – product is a mixture

3.2 Mixtures

Ingredient	CAS	%	Classification
1-propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymd.	69991-67-9	>99%	Not classified
Perfluoalkyl silane	Trade secret	<1%	Skin Irrit. 1B; Eye Irrit. 1 ; H314 ; H319

Section 4: First aid measures

4.1 Description of the first aid measures

EYE CONTACT: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Oxygen or artificial respiration if needed.

INHALATION: Solvent is non-volatile liquid, and of low viscosity. Solvent not classified Aspiration Toxic. If spray is inhaled, seek medical advice if any discomfort.
SKIN CONTACT: Wash with soap and water. If irritation or rash develops, seek medical attention.
INGESTION: If swallowed, DO NOT INDUCE VOMITING. May enter airways. Rinse mouth with water and drink cup of water. If continued discomfort, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

INGESTION: Ingestion may provoke the following symptoms: nausea, vomiting, diarrhea
INHALATION: No known symptoms
EYES: Contact with eyes may cause irritation, Redness
SKIN: Symptoms: Redness, Irritation

4.3 Indication of any immediate medical attention and special treatments needed

Dilute affects area. No special medical treatment needed

Section 5: Firefight measures

5.1 Extinguishing media

5.1.1 Suitable extinguishing media
- Water
- Powder
- Foam
- Dry chemical
- Carbon dioxide (CO2)

5.1.2 Unsuitable extinguishing media
None

5.2 Special hazards arising from substances or mixture

- The product is not inflammable
- Not explosive
- In case of fire hazardous decomposition products may be produced such as: Gaseous hydrogen fluoride (HF), Fluorophosgene

5.3 Advice for fire fighters

- Wear self-contained breathing apparatus and protective suit
- When intervention in close proximity wear acid resistant over suit
- Evacuate personnel to safe areas
- Approach from upwind
- Protect intervention team with a water spray as they approach the fire
- Keep containers and surroundings cool with water spray
- Keep product and empty container away from heat and sources of ignition

Section 6: Accidental releases measures

6.1 Personal precautions, precaution equipment and emergency procedures

6.1.1. Advice for non-emergency personnel
- Prevent further leakage or spillage if safe to do so

6.1.2. Advice for emergency responders

- Ensure adequate ventilation
- Material can create slippery conditions
- Sweep up to prevent slipping hazardous
- Keep away from open flames, hot surfaces and sources of ignition

6.2 Environmental precautions

- Should not be released into environment
- Do not flush into surface water or sanitary sewer system

6.3 Methods and materials for containment and clearing up

- Soak up with inert absorbent material
- Suitable material for picking up
- Dry sand
- Earth
- Shovel into suitable container for disposal

6.4 References to other sections

Refer to protective measures listed in sections 7 and 8

Section 7: Handling and storage

7.1 Precautions for safe handling

- Ensure adequate ventilation
- Use personal protective equipment
- Keep away from heat and sources of ignition
- To avoid thermal decomposition, do not overheat
- Take measures to prevent the build up of electrostatic charge
- Clean and dry piping circuits and equipment before any operations
- Ensure all equipment is electrically grounded before beginning transfer operations

7.2 Conditions for safe storage, including any incompatibilities

7.2.1. Storage

- Keep away from heat and sources of ignition
- Keep in properly labelled containers
- Keep away from combustible material
- Keep away from incompatible products
- Provide tight electrical equipment well protected against corrosion
- Refer to protective measures listed in sections 7 and 8

7.2.2. Packaging material

Suitable material: glass, plastic material

7.3 Specific end uses

For further information please contact the supplier

Section 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1. Exposure Limit Values

Remarks:

- Threshold limit values of by-products from thermal decomposition

Hydrogen fluoride anhydrous

- UK. EH40 Workplace Exposure Limits (WELs) 12 2011

time weighted average = 1.8 ppm

time weighted average = 1.5 mg/m3

Remarks: as F

- UK. EH40 Workplace Exposure Limits (WELs) 12 2011

Short term exposure limit = 3 ppm

Short term exposure limit = 2.5 mg/m3

Remarks: as F

- US. ACGIH Threshold Limit Values 03 2013

time weighted average = 0.5 ppm

Remarks: as F

- US. ACGIH Threshold Limit Values 03 2013

Ceiling Limit Value = 2 ppm

Remarks: as F

- EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU 12 2009
time weighted average = 1.8 ppm
time weighted average = 1.5 mg/m3
Remarks: Indicative
- EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU 12 2009
Short term exposure limit = 3 ppm
Short term exposure limit = 2.5 mg/m3
Remarks: Indicative
- US. ACGIH Threshold Limit Values 03 2013
Remarks: as F, Can be absorbed through skin.

Carbonyl difluoride

- US. ACGIH Threshold Limit Values 03 2013
time weighted average = 2 ppm
- US. ACGIH Threshold Limit Values 03 2013
Short term exposure limit = 5 ppm
- UK. EH40 Workplace Exposure Limits (WELs) 12 2011
time weighted average = 2.5 mg/m3
Remarks: as F
- EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU 12 2009
time weighted average = 2.5 mg/m3
Remarks: Indicative

8.2 Exposure controls

8.2.1. Appropriate engineering controls
- Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

8.2.2. Individual protection measures

8.2.2.1. Respiratory protection
- In case of decomposition (see section 10), use an air breathing apparatus with face mask.
- Use only respiratory protection that conforms to international/ national standards.

8.2.2.2. Hand protection
- Wear protective gloves.
- Suitable material: Nitrile rubber, PVC, Neoprene gloves, butyl-rubber
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

8.2.2.3. Eye protection
- Tightly fitting safety goggles

8.2.2.4. Skin and body protection
- Wear work overall and safety shoes.

8.2.2.5. Hygiene measures
- Ensure that eyewash stations and safety showers are close to the workstation location.
- When using, do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

8.2.3. Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: colourless liquid
b) Odour: None
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: No data available
f) Initial boiling point and boiling range: 80-135°C
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits Upper explosion limit: No data available
k) Vapour pressure 10.5 – 135 °C
l) Vapour density No data
m) Relative density 1.69 – 1.72 g/mL
n) Water solubility Insoluble
o) Partition coefficient: No data available
p) Auto-ignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity 0.95 – 1.7 mPa.s
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other information

None

Section 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions normal of use

10.2 Chemical Stability

- Stable under recommended storage conditions
- Metals promote and lower decomposition temperature
- In presence of titanium and its alloys the decomposition temperature decreases to 260°C

10.3 Possibility of hazardous reactions

Hazardous reaction will not occur.

10.4 Conditions to avoid

- Avoid to use in presence of high voltage electric arc and in absence of oxygen

10.5 Incompatible materials

Non-aqueous alkalis, Lewis acid (Friedel-Crafts) above 100°C, Aluminium and magnesium in power form above 200°C.

10.6 Hazardous decomposition products

Gaseous hydrogen fluoride (HF), Fluorophosgene

Section 11: Toxicology information

11.1. Acute toxicity
11.1.1. Acute oral toxicity
- LD50, rat, > 5,000 mg/kg
11.1.2. Acute inhalation toxicity
- LC50, rat , > 1,826 mg/l
11.1.3. Acute dermal toxicity
- LD50, rat, > 2,000 mg/kg

11.2. Skin corrosion/irritation
- rabbit, No skin irritation

11.3. Serious eye damage/eye irritation
- rabbit, No eye irritation

11.4. Respiratory or skin sensitisation
- guinea pig, Did not cause sensitisation on laboratory animals., Dermal

11.5. Germ cell mutagenicity
- Not mutagenic in Ames Test.
- Chromosome aberration test in vitro, negative

11.6. Carcinogenicity
- no data available

11.7. Reproductive toxicity
- no data available

11.8. Specific target organ toxicity - single exposure
- Remarks: no data available

11.9. Specific target organ toxicity - repeated exposure
- Oral, 28 d, rats, > 1000 mg/kg, Remarks: NOEL
- Remarks: Subacute toxicity

11.10. Aspiration hazard
- no data available

11.11. Other information
- Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components.
- The product is biologically inert.
- Thermal decomposition can lead to release of toxic and corrosive gases.
- Exposure to decomposition products
- Causes severe irritation of eyes, skin and mucous membranes.

Section 12: Ecological information

12.1. Toxicity
- no data available

12.2. Persistence and degradability
12.2.1. Abiotic degradation
- Result: no data available
12.2.2. Biodegradation
- no data available

12.5. Results of PBT and vPvB assessment
- no data available

12.6. Other adverse effects
- Ecological injuries are not known or expected under normal use.

12.3. Bioaccumulative potential
- Result: no data available

12.4. Mobility in soil
- no data available

Section 13: Disposal consideration

13.1. Waste treatment methods
- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralisation or recovery of HF.
- Dispose of in accordance with local regulations.

13.2. Contaminated packaging
- Empty containers can be landfilled, when in accordance with the local regulations.

Section 14: Transport information

14.1 International transport regulations

- Sea (IMO/IMDG)
- not regulated
- Air (ICAO/IATA)
- not regulated
- European Road/Rail (ADR/RID)
- not regulated
- Inland waterway transport
- not regulated

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended
- European Waste Catalogue
- Waste codes should be assigned by the user based on the application for which the product was used.

Notification status

Inventory Information	Status
USA. Toxic Substances Control Act (TSCA)	- Listed on inventory
Australia. Inventory of Chemical Substances (AICS)	- Listed on inventory
Canada. Domestic Substances List (DSL)	- Listed on inventory
Korea. Existing Chemicals Inventory (KECI (KR))	- Listed on inventory
China. Inventory of Existing Chemical Substances (IECSC)	- Listed on inventory
Japan. Industrial Safety & Health Law Inventory (ISHL (JP))	- Listed on inventory
Japan. Inventory of Existing & New Chemical Substances (ENCS)	- Listed on inventory
Philippine. Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on inventory
New Zealand. Inventory of Chemicals (NZIOC)	- Listed on inventory
Yaiwan. National Existing Chemical Substance Inventory (NECSI)	- Listed on inventory
EU. European Registration, Evaluation, Autorisation and Restriction of Chemical (REACH)	- In compliance with REACH

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

Section 16: Other information

16.1 Revision information

This is a new SDS

This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request.
The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.