

EU - Material Safety Data Sheet (according to 91/155/EWG)

Product Names: Fluoronox S 90/1, Fluoronox S 90/2, Fluoronox S 90/3
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1. Identification of the substance or preparation, company

Product name: Fluoronox S 90/1, Fluoronox S 90/2, Fluoronox S 90/3
Company: TECCEM e.K.
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Germany
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2. Composition / Information on ingredients

Chemical identification:	CAS-Number	Content % by weight
Perfluoropolyether	60164-51-4	62 - 76
Polytetrafluoroethylene	9002-84-0	24 - 38

3. Hazards identification

Adverse human health effects:

The product, when properly handled, according to the good working and hygienic practices, is not dangerous for the human health.

Environmental effects:

The product, when properly handled, according to the good working and hygienic practices, is not dangerous for the environment.

Specific hazards:

Harmful effects for health and environment may occur in case of thermal decomposition, due to heating or fire, for the emission of toxic and corrosive gases.

Skin contact:

Prolonged skin contact may cause skin irritation with discomfort or rash without skin sensitization.

Eye contact:

Eye contact may cause eye discomfort with tearing and/or blurring of vision.

Ingestion:

May cause abdominal pain, nausea, vomiting

4. First Aid

Inhalation:

Move to fresh air in case of accidental inhalation of vapours or decomposition products. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin contact:

Wash off with soap and water.

Eye contact:

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Rinse with plenty of water for at least 15 minutes. If signs/symptoms persist, consult a physician.

Ingestion:

Rinse mouth. Give some glasses of water to drink. Do not induce vomiting. Seek medical advice in case of persistent pain.

5. Fire fighting measures

Flammable properties:

The product is not flammable and not explosive.

Suitable extinguishing media:

As appropriate for combustibles in the area. The product itself does not burn or ignite.

Protection of fire fighters:

Wear self-contained breathing apparatus. Wear full protective clothing for skin and eyes against corrosive vapours.

Specific hazards:

See **Stability and reactivity** (section 10) for thermal decomposition information.

6. Accidental release measures

Personal precautions:

Use appropriate personal protective equipment during clean-up. Avoid contact of the released product with glowing surfaces and flames. Possible risk only in case of thermal decomposition of the product.

Environmental precautions:

Avoid uncontrolled release of the product in sewage systems, in surface and underground waters and soil.

Methods for cleaning up:

Sweep-up to prevent slipping hazard and use suitable powder, sand or saw dust. Collect it in suitable containers for disposal.

7. Handling and storage

Handling:

Avoid contact with eyes. Avoid contact with skin. No smoking while using this product. Wash thoroughly after handling. Avoid heating of the product above its decomposition temperature (290°C).

Storage:

Keep container tightly closed. Keep away from heat, glowing surfaces and flames to avoid decomposition products. Keep away from combustible and explosive materials.

8. Exposure controls / personal protection

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Exposure limits:

Threshold limits of by-products from thermal decomposition (ACGIH 2004):

HF:	TLV/TWA/Ceiling	= 2,6 mg/m ³	3 ppm
COF ₂ :	TLV/TWA/STEL	= 5,4 mg/m ³	2 ppm

Engineering controls:

In situations where overheating of the product may occur due to misuse or equipment failure, use appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines.

Personal protective equipment:

Respiratory: Not necessary in normal use. Where the potential exists for exposure to decomposition products due to overheating (>290°C) wear approved respiratory protection.

Eye protection: Safety glasses with side shields, safety goggles.

Hand protection: Impervious gloves. Suitable materials are Latex, Vinyl, Nitril

Hygiene measures: Wash hands before breaks and immediately after handling the product. Do not drink, eat and smoke during handling.

9. Physical and chemical properties

Form:	Semi-solid
Colour:	White
Odour:	None
pH:	Neutral, 7
Relative density:	1,89 - 1,94 g/cm ³ at 24°C
Solubility in water:	Negligible
Melting point:	> 320°C
Flash point:	Does not flash (PMCC)
Explosive properties:	Not applicable
Solubility in organic solvents:	Soluble in highly fluorinated solvents

10. Stability and reactivity

Stability:

The product is stable in normal conditions of use and storage.

Conditions to avoid:

Temperatures above 290°C (554°F): Decomposition may form potentially toxic fluorine compounds.

Temperatures above 355°C (554°F): Decomposition occurs at increasing rates as temperature is raised, forming potentially toxic fluorine compounds.

Materials to avoid:

Aluminium powder, Magnesium powder, Titanium and their alloys may lower decomposition temperatures.

Hazardous decomposition products:

In case of thermal decomposition potentially toxic, potentially irritant and potentially

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corrosive vapours occur, e. g. fluorohydro (HF), carbonyl fluoride (COF₂), carbon monoxide (CO), carbon dioxide (CO₂), Perfluoroisobutylene (PFIB).

11. Toxicological information

Penetration routes:

Contact or ingestion of the product. Inhalation of gases from thermal decomposition.

Adverse effects for the Human Health:

Acute toxicity:	no known effects
Local effects:	not irritant;
Sensitization:	no known effects
Chronic toxicity:	no known effects
Carcinogenicity:	no known effects
Mutagenicity:	no known effects
Reproduction toxicity:	no known effects

Decomposition products may cause severe irritation to skin, eyes, mucosae and polymer fume fever.

Further information:

Irritation skin	non-irritant	species: rabbit
Irritation eye	non-irritant	species: rabbit

12. Ecological information

Ecotoxicological and environmental information:

No data available. Use the product to the good working practice, avoiding polluting the environment.

Further information:

Because of the high insolubility of the product in water, toxic effects to aquatic systems are not likely.

13. Disposal considerations

Product:

Can be burned in high temperature ovens, which are suitable and approved for burning fluorine compounds. Waste code number 130202 (according to EAK).

Empty containers:

In case that cleaned containers cannot be recycled, dispose to local regulations.

14. Transportation information

Land transport ADR / RID and GGVS /GGVE:

Not restricted

Ocean transport IMDG /GGV Sea:

Not restricted

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Air transport ICAO / IATA:

Not restricted:

15. Regulatory information

According to EC regulations, directive 67/548 and amendments, the product is not classified as dangerous for supply.

Risk phrases (R) : None

Safety phrases (S): None

16. Other information

The information in this material safety data sheet is correct to the best of our knowledge, information and belief at the date of publication. The information given shall provide information for safe handling, use, storage, transport and disposal only. The information relates only to the product designated herein, and does not relate to its use in combination with any other material or process, unless specified in the text. The information in this material safety data sheet is not considered a warranty or quality specification.