F4

Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200
Issue date: 1/22/2024 Revision date: 1/22/2024 Supersedes: 3/18/2015 Version: 6.00

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Trade name	:	F4
Chemical name	:	perfluorinated polyether oil
Project-No.	:	PK_0004_M
Material code	:	00000090

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Operating fluid / lubricant for vacuum pumps
Restrictions on use	:	Restricted to professional users

1.3. Supplier

Manufacturer/Supplier
PFEIFFER VACUUM GmbH
Berliner Strasse 43
Asslar, 35614
Deutschland
T +49 6441 / 802-0 - F +49 6441 / 802-1202
info@pfeiffer-vacuum.com - www.pfeiffer-vacuum.com

Email competent person
sds@kft.de

Importer
Pfeiffer Vacuum Inc.
24 Trafalgar Square
Nashua, NH 03063
USA
T +1 800-248-8254

1.4. Emergency telephone number

Emergency number	:	603-578-6500

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Chemical name : perfluorinated polyether oil
Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Strong water jet.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon monoxide. Carbon dioxide. Halogenated compounds.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid sub-soil penetration.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

Other information : Disposal must be done according to official regulations.

6.4. Reference to other sections

Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Take precautionary measures against static discharges. Prevent build-up of electrostatic charges (e.g, by grounding).

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Information about storage in one common storage facility : Keep away from food, drink and animal feeding stuffs.

Packaging materials : Polyethylene (high density).

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

perfluorinated polyether oil

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Materials for protective clothing:

Use protective clothing

Hand protection:

In case of repeated or prolonged contact wear gloves. Chemically resistant protective gloves. ISO 374-1. Nitrile rubber. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear

Eye protection:

Use splash goggles when eye contact due to splashing is possible. ISO 16321-1

Skin and body protection:

Wear suitable protective clothing. EN 13034. EN ISO 13688

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Short term exposure. EN 143. breathing apparatus with filter. Extra personal protection: A/P2 filter respirator for organic vapor and harmful dust. Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	colorless
Odor	:	odorless
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	Not flammable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not flammable Not flammable.
Vapor pressure	:	< 0.001 hPa (20°C)
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Density	:	1.9 g/cm³ (20°C)
Solubility	:	Water: Insoluble
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	60 mm²/s (40°C)
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	Product is not explosive.
Oxidizing properties	:	Non oxidizing material.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

No additional information available.

10.5. Incompatible materials

No additional information available.

10.6. Hazardous decomposition products

> 280°C Gefahr der Entstehung toxischer fluorhaltiger Pyrolyseprodukte.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified
Skin corrosion/irritation	:	Not classified (Based on available data, the classification criteria are not met) pH: No data available
Serious eye damage/irritation	:	Not classified (Based on available data, the classification criteria are not met) pH: No data available
Respiratory or skin sensitization	:	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	:	Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	:	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	:	Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic	:	60 mm²/s (40°C)

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

perfluorinated polyether oil	
Persistence and degradability	No additional information available.

12.3. Bioaccumulative potential

perfluorinated polyether oil	
Bioaccumulative potential	No additional information available.

12.4. Mobility in soil

perfluorinated polyether oil	
Ecology - soil	No additional information available.

12.5. Other adverse effects

Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Disposal must be done according to official regulations. Do not dispose of with domestic waste. Do not discharge into drains or the environment.

Product/Packaging disposal recommendations : Do not dispose of with domestic waste. Recycle or dispose of in compliance with current legislation.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

DOT	IMDG	IATA
14.1. UN number		
Not applicable	Not applicable	Not applicable
14.2. Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Not applicable	Not applicable	Not applicable
No supplementary information available		

14.6. Special precautions for user

DOT
Not applicable

IMDG
Not applicable

IATA
Not applicable

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

SECTION 16: Other information

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

Revision date : 1/22/2024

Data sources : MSDS of the supplier.

Department issuing data specification sheet: : KFT Chemieservice GmbH
Im Leuschnerpark 3
D-64347 Griesheim

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Contact person : Blerarta Avdylaj

Other information : Version/s 3.00 - 5.09 is/are not available in this language.

Abbreviations and acronyms	
ADR	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ADN	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
IATA	International Air Transport Association
IMDG	International Maritime Code for Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
vPvB	Very Persistent and Very Bioaccumulative
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LOAEL	Lowest Observed Adverse Effect Level
PNEC	Predicted No-Effect Concentration
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit

Indication of changes:
General revision.

KFT SDS US 11 - Version 23.1

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.