



## **Krytox™ PFPE Oils**

Version 4.0 (replaces: Version 3.7)

Revision Date 15.10.2015

Ref. 150000000934

This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

### **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

#### **1.1. Product identifier**

Product name : Krytox™ PFPE Oils

Types : GPL: 100, 101, 102, 103, 104, 105, 106, 107, 107-500  
VPF: 1506, 1514, 1520, 1525, 1525S, 1531, 1531E, 1618, 1645, 16256, 16350  
CBF: 100A, 100B, 103B  
GBO: 14, 25  
XHT- : 500, 750, 1000  
FG 40  
AUT 1045  
4442, 4402, TFO, TLC, NBF140  
TLF 8996  
KDP-4885  
Krytox ESP 250C  
Krytox SKY188  
Zonyl 1045

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

Use of the Substance/Mixture : Lubricant, For professional users only.

#### **1.3. Details of the supplier of the safety data sheet**

Company : Chemours Netherlands B.V.  
Baanhoekweg 22  
NL-3313 LA Dordrecht  
Netherlands

Telephone : +31-(0)-78-630-1011

Telefax : +31-78-6163737

E-mail address : sds-support@chemours.com

#### **1.4. Emergency telephone number**

Emergency telephone number : +(44)-870-8200418

### **SECTION 2: Hazards identification**

#### **2.1. Classification of the substance or mixture**



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Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

### 2.2. Label elements

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

### 2.3. Other hazards

Inhalation of decomposition products from overheating may cause lung irritation or shortness of breath.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
<b>Perfluoroalkylether (CAS-No.60164-51-4)</b>		
		100 %

### 3.2. Mixtures

Not applicable

The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- General advice : When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.
- Skin contact : Wash with water and soap as a precaution.
- Eye contact : Rinse with plenty of water. If eye irritation persists, consult a specialist.
- Ingestion : Never give anything by mouth to an unconscious person. DO NOT induce vomiting unless directed to do so by a physician or poison control center.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms : Effects of breathing high concentrations of vapour may include:, Irritation, Shortness of breath



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### **4.3. Indication of any immediate medical attention and special treatment needed**

Treatment : Treat symptomatically.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

Suitable extinguishing media : The product itself does not burn.  
: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### **5.2. Special hazards arising from the substance or mixture**

Specific hazards during firefighting : In fire conditions, toxic decomposition products may be formed. (see also section 10)

### **5.3. Advice for firefighters**

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment.

Further information : Standard procedure for chemical fires.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions : Wear personal protective equipment. Avoid contact with the skin and the eyes.

### **6.2. Environmental precautions**

Environmental precautions : Prevent material from entering sewers, waterways, or low areas.

### **6.3. Methods and materials for containment and cleaning up**

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

### **6.4. Reference to other sections**

For personal protection see section 8., For disposal instructions see section 13.

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**



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Advice on safe handling : Avoid breathing vapors from overheated material.

### 7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep container closed to prevent contamination.

Other data : No decomposition if stored and applied as directed.

### 7.3. Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

If sub-section is empty then no values are applicable.

### 8.2. Exposure controls

Engineering measures : In the event that the polymer is heated above 350°C (662°F), local ventilation should be used to avoid exposure to fumes.

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection :  
No particular glove type is recommended, but nitrile may be used.

Skin and body protection : No PPE is specified however, avoid contact with skin, eyes, and clothing.  
Preventive skin protection

Hygiene measures : General industrial hygiene practice.

Respiratory protection : No personal respiratory protective equipment normally required. In the case of hazardous fumes caused by overheating, wear self-contained breathing apparatus.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Form : viscous, liquid

Colour : colourless

Odour : none



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pH	: neutral
pour point	: < -5 °C
Flash point	: Method: Pensky-Martens closed cup - PMCC does not flash
Thermal decomposition	: ca. 350 °C
Relative density	: ca. 1.86 - 1.91 at 24 °C
Water solubility	: insoluble

### 9.2. Other information

no data available

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	: Stable at normal ambient temperature and pressure.
<b>10.2. Chemical stability</b>	: Stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	: Decomposes on heating.
<b>10.4. Conditions to avoid</b>	: Decomposition temperature : 350 °C
<b>10.5. Incompatible materials</b>	: no data available
<b>10.6. Hazardous decomposition products</b>	: Hazardous thermal decomposition products: Fluorinated compounds

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute oral toxicity

- Perfluoroalkylether  
LD50 / Rat : > 11,000 mg/kg

Acute inhalation toxicity

- Perfluoroalkylether  
LC50 / 4 h Rat  
Due to its physical properties, there is no potential for adverse effects. Information given is based on data



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obtained from similar substances.

### Acute dermal toxicity

- Perfluoroalkylether  
LD50 / Rabbit : > 17,000 mg/kg

### Skin irritation

- Perfluoroalkylether  
Rabbit  
Classification: Not classified as irritant  
Result: No skin irritation

### Eye irritation

- Perfluoroalkylether  
Rabbit  
Classification: Not classified as irritant  
Result: No eye irritation

### Sensitisation

- Perfluoroalkylether  
Guinea pig  
Classification: Does not cause skin sensitisation.  
Result: Does not cause skin sensitisation.  
Method: OECD Test Guideline 406

### Repeated dose toxicity

- Perfluoroalkylether  
Oral Rat  
No toxicologically significant effects were found.  
  
Inhalation Rat  
No toxicologically significant effects were found.

### Mutagenicity assessment

- Perfluoroalkylether  
Did not cause genetic damage in cultured bacterial cells.

## SECTION 12: Ecological information

### 12.1. Toxicity

Toxicity to fish



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- Perfluoroalkylether  
LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): > 1,000 mg/l

### Toxicity to aquatic plants

- Perfluoroalkylether  
ErC50 / 72 h / Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l  
NOEC / 72 h / Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l

### Toxicity to aquatic invertebrates

- Perfluoroalkylether  
EC50 / 48 h / Daphnia magna (Water flea): > 100 mg/l

## 12.2. Persistence and degradability

### Biodegradability

According to the results of tests of biodegradability this product is not readily biodegradable.

## 12.3. Bioaccumulative potential

no data available

## 12.4. Mobility in soil

no data available

## 12.5. Results of PBT and vPvB assessment

no data available

## 12.6. Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

- Product : Dispose of in accordance with the European Directives on waste and hazardous waste.
- Contaminated packaging : Dispose of container properly. If recycling is not practicable, dispose of in compliance with local regulations.

## SECTION 14: Transport information

### ADR

14.1. UN number: Not applicable



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- |                                     |  |
|-------------------------------------|--|
| 14.2. UN proper shipping name:      | Not applicable   |
| 14.3. Transport hazard class(es):   | Not applicable   |
| 14.4. Packing group:                | Not applicable   |
| 14.5. Environmental hazards:        | none   |
| 14.6. Special precautions for user: | Not classified as dangerous in the meaning of transport regulations. |

### IATA\_C

- |                                     |  |
|-------------------------------------|--|
| 14.1. UN number:                    | Not applicable   |
| 14.2. UN proper shipping name:      | Not applicable   |
| 14.3. Transport hazard class(es):   | Not applicable   |
| 14.4. Packing group:                | Not applicable   |
| 14.5. Environmental hazards:        | none   |
| 14.6. Special precautions for user: | Not classified as dangerous in the meaning of transport regulations. |

### IMDG

- |                                     |  |
|-------------------------------------|--|
| 14.1. UN number:                    | Not applicable   |
| 14.2. UN proper shipping name:      | Not applicable   |
| 14.3. Transport hazard class(es):   | Not applicable   |
| 14.4. Packing group:                | Not applicable   |
| 14.5. Environmental hazards:        | none   |
| 14.6. Special precautions for user: | Not classified as dangerous in the meaning of transport regulations. |

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

Other regulations : No specific information about other regulations/legislation to be mentioned.

### 15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

## SECTION 16: Other information

### Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm





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EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

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Significant change from previous version is denoted with a double bar.

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