



## DuPont™ Krytox® PFPE Oils

Version 3.7

Revision Date 22.10.2013

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 : DuPont™ 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: 10, 12, 15, 40, 45  
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

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

Company : Du Pont de Nemours (Nederland) B.V.  
Baanhoekweg 22  
NL-3313 LA Dordrecht  
Netherlands

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

Telefax : +31-(0)-78-630-1181

E-mail address : sds-support@che.dupont.com

#### 1.4. Emergency telephone number

Emergency telephone number : +44 (0) 8456 006 640

### SECTION 2: Hazards identification

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

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

This substance is not classified as dangerous according to Directive 67/548/EEC.

#### 2.2. Label elements



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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 Directive 67/548/EEC	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration
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**Perfluoroalkylether (CAS-No.60164-51-4)**

			100 %
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**3.2. Mixtures**

not applicable

The above products are REACH compliant; 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

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

- Treatment : Treat symptomatically.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**



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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

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



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**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 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
- 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



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**SECTION 10: Stability and reactivity**

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

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

Acute oral toxicity

- Perfluoroalkylether  
LD50 / rat : > 37,400 mg/kg

Acute inhalation toxicity

- Perfluoroalkylether  
ALC - Approximate Lethal Concentration / 4 h rat : ca. > 19.54 mg/l

Acute dermal toxicity

- Perfluoroalkylether  
ALD - Approximate Lethal Dose / rabbit ca. : > 17,000 mg/kg

Skin irritation

- Perfluoroalkylether  
rabbit  
Classification: Not classified as irritant  
Result: slight irritation

Eye irritation

- Perfluoroalkylether  
rabbit  
Classification: Not classified as irritant  
Result: slight irritation

Sensitisation

- Perfluoroalkylether



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human

Classification: Not a skin sensitizer.

Result: Patch test on human volunteers did not demonstrate sensitisation properties.

Method: Modified Draize Test

Mutagenicity assessment

- Perfluoroalkylether  
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity assessment

- Perfluoroalkylether  
no data available
- Not classifiable as a human carcinogen.

Toxicity to reproduction assessment

- Perfluoroalkylether  
no data available
- No toxicity to reproduction

Assessment teratogenicity

- Perfluoroalkylether  
no data available

**SECTION 12: Ecological information**

**12.1. Toxicity**

Toxicity to fish

- Perfluoroalkylether  
LC50 / 96 h / *Oncorhynchus mykiss* (rainbow trout): > 1,000 mg/l  
The substance is a polymer and is not expected to produce toxic effects.

Toxicity to aquatic invertebrates

- Perfluoroalkylether  
EC50 / 48 h / *Daphnia magna* (Water flea): > 1,000 mg/l

**12.2. Persistence and degradability**

Biodegradability

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

**12.3. Bioaccumulative potential**

no data available



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**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
- 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



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### 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

Other information professional use

#### 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
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 observable 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
vPvB	very Persistent and very Bioaccumulative

#### Restrictions on use





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Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications and DuPont CAUTION Regarding Medical Applications.

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.