Material Safety Data Sheet

Krytox® PFPE/PTFE Greases (GPL 20(X) Series)

Version 2.1

Revision Date 12/03/2009 Ref. 150000001170

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Krytox® PFPE/PTFE Greases (GPL 20(X) Series)
Product Grade/Type : GPL: 200, 201, 202, 203, 204, 205, 206, 207-500
                  XHT-S, XHT-SX
                  FG: 20, 22, 24, 26
                  NRT: 8900, 8904, 8906, PLSS
                  Sealant: ST-45, ST-63
                  EG-2000, EG-3000
                  LVP, LS-23, AUT 2045, UM 04 PGL, TLC Grease

MSDS Number : 150000001170
Product Use : Lubricant
Manufacturer : DuPont
              1007 Market Street
              Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)
Other information : professional use

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
The product as such is not hazardous. The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

Potential Health Effects
Eyes : May cause eye irritation.

Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfluoropolyether</td>
<td></td>
<td>55 - 85 %</td>
</tr>
<tr>
<td>PTFE</td>
<td></td>
<td>15 - 45 %</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

Skin contact : Wash off with soap and plenty of water.
Material Safety Data Sheet

Krytox® PFPE/PTFE Greases (GPL 20(X) Series)

Version 2.1

Revision Date 12/03/2009

Ref. 150000001170

Eye contact
Rinse with plenty of water. If eye irritation persists, consult a specialist.

Inhalation
Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.

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.

General advice
When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties
Flash point
Method : Pensky-Martens closed cup - PMCC
does not flash

Thermal decomposition : 300 °C (572 °F)
Fire and Explosion Hazard : In fire conditions, toxic decomposition products may be formed.

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

Firefighting Instructions
Wear self-contained breathing apparatus and protective suit. Standard procedure for chemical fires.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) Refer to protective measures listed in sections 7 and 8.
Spill Cleanup Shovel into suitable container for disposal.

Accidental Release Measures Prevent material from entering sewers, waterways, or low areas.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) Avoid breathing vapors from overheated material. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. General industrial hygiene practice.

Storage No special storage conditions required. Keep container closed to prevent contamination. No decomposition if stored and applied as directed.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: In the event that the polymer is heated above 300 °C (572 °F) local ventilation should be used to avoid exposure to fumes.

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

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

Eye protection: Safety glasses

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form: grease
Color: white
Odor: none
pH: neutral
Melting point/range: 320 °C (608 °F)
Specific Gravity: 1.89 - 1.93 at 24 °C (75 °F)
Water solubility: insoluble

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Conditions to avoid: Decomposition temperature 300 °C (572 °F)
Hazardous decomposition products: Hazardous thermal decomposition products: Fluorinated compounds

SECTION 11. TOXICOLOGICAL INFORMATION

Krytox® PFPE/PTFE Greases (GPL 20(X) Series)
Oral ALD: > 11,000 mg/kg, rat
Skin irritation: Species: rabbit, No skin irritation Draize Test
Eye irritation: Species: rabbit, Mild eye irritation Draize Test
Material Safety Data Sheet

Krytox® PFPE/PTFE Greases (GPL 20(X) Series)

Version 2.1

Revision Date 12/03/2009

Ref. 150000001170

Sensitisation:
Species: guinea pig. Animal test did not cause sensitization by skin contact. Method: Buehler Test

Further information:
The substance is a polymer and is not expected to produce toxic effects.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity
Perfluoropolyether
96 h LC50:
Oncorhynchus mykiss (rainbow trout) > 1,000 mg/l
Aquatic toxicity is unlikely due to low solubility.

48 h static test EC50:
Daphnia magna (Water flea) > 1,000 mg/l

PTFE:
Aquatic toxicity is unlikely due to low solubility.

Additional ecological information:
No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal:
In accordance with local and national regulations.

Environmental Hazards:
Dispose of container properly. If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA Status:
On the inventory, or in compliance with the inventory

PA Right to Know Regulated Chemical(s):
Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Polytetrafluoroethylene
Polytetrafluoroethylene is listed, but we believe it was listed in error and have petitioned to have it delisted.

SECTION 16. OTHER INFORMATION

MSDS preparation date:
12/03/2009

Restrictions for use:
Do not use DuPont materials in medical applications involving implantation
Material Safety Data Sheet

Krytox® PFPE/PTFE Greases (GPL 20(X) Series)

Version 2.1

Revision Date 12/03/2009

Ref. 150000001170

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 H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

Krytox® and The DuPont Oval Logo® are trademarks of E. I. du Pont de Nemours and Company

Contact person : MSDS Coordinator, DuPont Chemical Solutions Enterprise, Wilmington, DE 19898, (800) 441-7515

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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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