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Material Safety Data Sheet

In accordance with REACH Regulation (EC) No 1907/2006

Product Name: UTECFLON-4C

Revision Date: 16 January 2019

1. Identification of the substance

Trade name: UTECFLON-4C

Application: material for the machining of hydraulic and pneumatic sealing elements

Producer: UTEC Sealing Solutions Co., Ltd.
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2. Identification of hazards

This product is not harmful if handled and stored properly.

3. Composition

Chemical description: Polymer based Polytetrafluoroethylene (PTFE)
Contains 20% Carbon powder

Contents:

Chemical name	Structure	CAS Nr.	Content (w%)
PTFE <i>or</i>	$(C_2F_4)_n$	9002-84-0	80
PTFE:PPVE (Perfluoropropylvinylether) Copolymer	$(C_2F_2)_n$	26655-00-5	
Carbon powder	—	7440-44-0	20

4. First Aid measures

Inhalation: In case of accidental inhalation of fumes or thermal decomposition products, don appropriate protective gear and remove victim from the hazard zone. If the person is unresponsive, apply artificial respiration/CPR if necessary. Seek medical help and keep victim calm and warm.

Skin Contact: In case of contact with molten material, immediately cool affected areas with cold water for a prolonged time. Do not use ice to cool.

Remove contaminated clothing. Do not attempt to peel off any polymer stuck to skin. Cover burns with sterile bandages and seek medical attention.

Eye Contact: If a foreign body (splinter, chip) enters the eye do not rub. Rinse immediately with plenty of water and seek medical attention.

5. Firefighting measures

Suitable extinguishing media: Water, alcohol-resistant foam, dry powder, carbon dioxide

Unsuitable extinguishing media: none known

Hazardous decomposition products: hydrogen fluoride, perfluoro isobutylene, carbonyl fluoride, tetrafluoroethylene, hexafluoropropylene. Do not inhale fumes.

Special protective equipment for combating fire: Wear full acid-resistant clothing including helmet with self-contained breathing apparatus, sealed jacket and trousers and protection for exposed skin.

Additional advice: Usual measures for fire with chemicals. Product is not flammable or explosive.

Fluorine polymers can increase the relative toxicity of released combustible gases.

In case of surrounding fire, remove the containers if possible to do so in safe conditions.

In case of impending fire, keep containers cool by spraying with water.

Stay upwind and at a safe distance from the flames.

6. Accidental release measures

No environmentally detrimental effects of the material are known, though it is not biologically degradable.

7. Handling and storage

Handling: Avoid overheating of material by improper handling. Avoid dust generation.

For mechanical operations local extraction / ventilation is recommended. Measures must be taken to avoid static electricity discharge if dust is produced.

Storage: The appropriate company regulations for fire prevention must be followed.

Storage class: LGK 11

8. Exposure control / personal protection

Exposure limits:

Total dust TLV – TWA	10.0 mg/m ³
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Threshold limits of byproducts from thermal decomposition

HF TLV – CEILING	2.6 mg/m ³	= 3 ppm
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COF ₂ TLV – STEL	13.5 mg/m ³	= 5 ppm
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Respiratory Protection: In case of dusty operating procedures, use respiratory protection (e.g. filter mask with P1 filter)

Eye Protection: In case of mechanical operations, wear safety glasses with side pieces.

Skin Protection: Wear protective clothing.

Hygiene Measures: General industrial hygiene regulations are to be observed.

Wash hands before breaks and at the end of work shift. Do not consume food or drink or smoke at the workplace. Do not contaminate tobacco products.

9. Physical and chemical properties

Form:	solid (semi-finished, finished parts)	
Color:	Black	
Odor:	odorless	
Melting point/-range:	~ 320°C (~ 608F)	(ISO 54765)
Decomposition Temperature:	> 260°C (> 500F)	
Ignition Temperature:	> 500°C (> 932F)	(ASTM D 1929)
Density:	2,05..2,11 g/cm ³	(ISO 53479)
Explosion Limits:	N/A	
Solubility:	Insoluble in water	

10. Stability and reactivity

Stability: The material is stable under normal conditions.

Conditions to avoid: Temperatures > 260 °C (> 500F) – start of thermal decomposition

Hazardous decomposition products: hydrogen fluoride, perfluoro isobutylene, carbonyl fluoride, tetrafluoroethylene, hexafluoropropylene

Substances to Avoid: molten alkaline metals and Fluorine under pressure.

11. Toxicological information

No adverse effects on health are known from appropriate handling of this material in line with its intended use.

Dust causes irritation to the eyes or skin; decomposition products may cause severe burns on skin, eyes and respiratory system.

Additional advice: Inhaling thermal decomposition vapors of fluorinated polymers can cause flu-like symptoms (headache, tremors, shortness of breath, coughing, sweating, elevated temperature) and are known as "polymer fume fever" or "Teflon flu". They are caused by the fumes released when PTFE reaches temperatures of 300-450°C (572-842F). When PTFE is heated above 450°C (842F) the pyrolysis products are different, and inhalation may cause acute lung injury. The symptoms appear approximately 2-4 hours after exposure. Prolonged exposure substantially increases the risk of long-term effects.

12. Ecological information

No damaging effects on the environment are known of the material; it is not biologically degradable. Due to the material's insolubility in water, separation by filtration or sedimentation is possible.

13. Disposal conditions

Uncontaminated product can be recycled.

If no further use of waste product is possible, it can be mixed with household waste or incinerated in appropriate facilities, in accordance with official local regulations. PTFE waste can be burned at temperatures above 800°C if flue-gas condensation system (wet scrubber) for removing hydrogen fluoride is used.

Waste product code No.: 20 01 39 (EWC) plastics.

14. Transport information

This product is not classified as dangerous goods under the terms of transport regulations:

ADNR: nonhazardous

ADR: nonhazardous

ICAO/IATA-DGR: nonhazardous

IMDG/UN: nonhazardous

RID: nonhazardous

mailable

15. Regulatory information

No designation is necessary in accordance with EU directive 67/548/EWG and 1999/45/EC.

16. Other information

The information in items 4-8 and 10-12 does not refer to appropriate use of the, but to the release of larger amounts of by-products due to accidents or irregularities in the handling of the aforementioned material.

For appropriate use of the product, see the specific product and usage information, e.g. Material Data Sheet.