HDN# 3155

Material Safety Data Sheet

Issued Nov-15-2004 Revised (0.9) Jul-25-2007

Section1: Identification of the substance and manufacturer

Trade name **POLYFLON PTFE F Powder Series**
Grade name F-104, F-104C, F-201, F-201L, F-108, F-208, F-303, F-208H

Synonym Polytetrafluroethylene(PTFE)

Company identification
Manufacturer DAIKIN FLUOROCHEMICALS(CHINA)CO.,LTD.
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Section 2: Composition / information on ingredients

Component	mass %	CAS No.
Polytetrafluoroethylene	>99.9	9002-84-0

Section 3: Hazard identification

EMERGENCY OVERVIEW:
Harmful if thermal decomposition products are inhaled. Normally inhalation problems should not be expected.

Potential Health Effects:
Vapors and fumes (and HF, COF_2 etc.) liberated during hot processing (above 260°C) with this material may cause flu-like symptoms (chills, fever and, sometimes, cough) that may not occur until several hours after exposure and typically pass within about 36 to 48 hours. Further the higher temperature (above 380°C), the larger vapors and fumes will increase.
A little of PFIB may be generated when exposed to temperatures above 475°C.
When this product contact some materials (ex. Titanium oxide), thermal decomposition may occur at lower temperature.

Section 4: First aid measures

Inhalation If exposed to fumes from overheating or combustion, remove to fresh air. Keep warm and at rest. If breathing has stopped, give artificial respiration. Call a physician.

Skin Contact Rinse and then wash skin with water and soap. If skin contact with hot material occurs: DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Immediately flush affected area with plenty of cold water and cover with a clean dressing. Have burn treated by a physician.

Eyes Contact Immediately flush eyes with plenty of water for at least 5 minutes. (Remove contact lenses if easily possible.) Consult a physician.

Ingestion Wash out mouth with water. Consult a physician.

SECTION 5: Fire-fighting measures

General Information	Low fire hazard. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media	Water Spray. Dry Chemical. Foam. Carbon Dioxide.
Fire fighting procedures	Keep personnel removed and upwind of fire. Use water spray to cool fire exposed containers. Wear self-contained breathing apparatus (SCBA) and full protective equipment.
WARNING	Hazardous decomposition products including carbon dioxide, carbon monoxide, hydrogen fluoride, COF_2, Perfluoroisobutylene (PFIB), toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.

SECTION 6: Accidental release measures

General Information	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks	Shovel or sweep up. When mixture spills, use proper absorber.
WARNING	Fluoropolymers spilled during handling should be cleaned up immediately and appropriate measures taken to prevent the creation of a slippery surface. It is advisable that some form of anti-slip flooring or similar preventive measures be provided in areas where fluoropolymer resins are regularly handled. Slipper surfaces in walking and working areas pose increased accident risks.

SECTION 7: Handling and storage

Handling	Use proper personal protective equipment as indicated in Section 8. Use in well ventilated areas. Exposure to toxic gases through inhalation can occur if smoking tobacco becomes contaminated by this material. Therefore, do not smoke in the work areas and wash hands and face after handling in order to avoid transfer of the material onto smoking tobacco. Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material.
Storage	Keep container tightly closed. Keep the temperature from 5 °C to 20 °C to maintain the quality.

SECTION 8: Exposure controls / personal protection

Exposure Guidelines:

HF	TLV: (as F): 0.5ppm as TWA, 2ppm as STEL; Ceiling (skin)(ACGIH 2005) MAK: 3ppm; 2.5mg/m^3, BAT 7mg/g creatinine (1999) MAK as STEL: 6ppm, 5mg/m^3 (1999)
COF_2	TLV: 2ppm; 5.4mg/m^3 (as TWA); 5ppm; 13mg/m^3 (as STEL) (ACGIH 1997)
Perfluoroisobutylene (PFIB)	TLV: 0.01ppm; 0.082 mg/m^3 (ceiling values) (ACGIH 1993-1994).

Engineering Controls: Use local exhaust ventilation facilities, when curing.

Personal Protective Equipment:

Eyes	Wear safety glasses with side shields.
Skin	Wear appropriate gloves, when handling this material to prevent thermal burns.
Clothing	Wear protective clothing and boots as required
Respirators	If thermal decomposition occurs, mask for acidic gases must be used to avoid inhalation of the product.

SECTION 9: Physical and chemical properties

Appearance	White powder
Odor	None
Boiling point	Not applicable
Melting Point	326-328 °C
Flash point	None
Volatiles	Not applicable
Specific gravity	2.14-2.20 (at 23 °C)
Solubility in water	Insoluble

SECTION 10: Stability and reactivity

Stability	Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid	Ignition sources, excess heat.
Decomposition products	Carbon monoxide, carbon dioxide, HF, COF_2, PFIB, toxic gases or particles may be formed during combustion.
Polymerization	Will not occur.
Incompatibility	Finely divided metallic powder or filler. Small particles of fluoropolymer resins can become extremely combustible in the presence of various metal fines materials. Metal fines (e.g. aluminum and magnesium) mixed with powdered PTFE when exposed to temperatures above 420 °C may react violently producing fire and/or explosion.

SECTION 11: Toxicological information

When heated for a long time, a very small quantity of hydrogen fluoride (HF), carbonyl fluoride (COF_2) Perfluoroisobutylene (PFIB) is generated. Further the higher temperature (above 380°C), the larger it will increase.
Follow safe industrial hygiene practices and wear proper protective equipment when handling this compound.

(as HF or COF_2)

Burning sensation. Cough. Dizziness. Headache. Laboured breathing. Nausea. Shortness of breath. Sore throat. Vomiting. Symptoms may be delayed.
Inhalation of this gas or vapour may cause lung oedema.

(as PFIB)

The substance irritates the respiratory tract. Inhalation of this gas may cause lung oedema. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

SECTION 12: Ecological information

This substance may not degrade significantly in most natural environments.
Exotoxicity is expected to be low.

SECTION 13: Disposal considerations

Dispose of in compliance with Federal, state and local government regulations.
Usually considered an inert packaging material that can be recycled or landfilled.
Incineration is not a preferred disposal method because of the possible formation of hydrogen fluoride.

SECTION 14: Transport information

SHIPPING NAME NONE

HAZARD CLASS	NOT DOT REGULATED
LABEL (S)	NONE
UN/NA NUMBER	NONE
IATA	NOT REGULATED BY IATA
IMO IMDG-code	NOT REGULATED FOR OCEAN TRANSPORTATION

SECTION 15: Regulatory information

NFPA-HMIS RATINGS (SCALE 0-4): HEALTH=1, FIRE=1, REACTIVITY=0

European Labeling in Accordance with EC Directives

Hazard Symbols	-
Risk Phrases	-
Safety Phrases	15: Keep away from heat. 20/21: When using, do not eat, drink or smoke.

SECTION 16: Other information

TSCA Chemical Inventory	listed
Canadian DSL Inventory	listed
Australian Inventory	listed
Korea Inventory of Chemicals	listed
Philippine Inventory (PICCS)	listed
Japan(ENCS)	listed
EINECS Number	listed by the monomer
China Inventory	listed

Reference:

"Guide to the safe handling of Fluoropolymer resins, 3rd edition"
Published by the Fluoropolymers Division of The Society of the Plastics Industry, Inc.

This product is not designed, manufactured, or intended for medical uses, including implantation to the body or other applications in direct contact with body fluids or tissues.
Do not use for non-industrial applications.

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. The information does not relate to use in combination with any other material or in any process.