



A 3M Company

Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Dyneon(TM) TF 1450, TF 1620, TF 1641, TF 1645, TF X 1670, TF X 1671, TF X 1675, TF 1750

MANUFACTURER: DYNEON
DIVISION: Dyneon

ADDRESS: 6744 33rd St. No.
Oakdale, MN 55128

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

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Product Use:

Intended Use: Fluoropolymer

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Polytetrafluoroethylene	9002-84-0	100

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Coarse Powder

Odor, Color, Grade: White, odorless

General Physical Form: Solid

Immediate health, physical, and environmental hazards:

May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

During heating:

Vapors from heated material may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

During heating:

Thermal Burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction.

Inhalation:**During heating:**

Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Polymer Fume Fever: Sign/symptoms may include chest pain or tightness, shortness of breath, cough, malaise, muscle aches, increased heart rate, fever, chills, sweats, nausea and headache.

If thermal decomposition occurs:

May be harmful if inhaled.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

No health effects are expected.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

Skin Contact: Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>

5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Exposure to extreme heat can give rise to thermal decomposition. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Clean up residue. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

For industrial or professional use only. Avoid eye contact with dust or airborne particles. Avoid skin contact with hot material. No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to polymer fume fever caused by the formation of the hazardous decomposition products mentioned in the Reactivity Data section of this MSDS. Store work clothes separately from other clothing, food and tobacco products.

7.2 STORAGE

Keep container tightly closed. Store away from heat. Store at room temperature. Store in a clean, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields, Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid skin contact. Avoid skin contact with hot material. Wear appropriate gloves, such as Nomex, when handling this material to prevent thermal burns.

8.2.3 Respiratory Protection

Avoid breathing of dust.

During heating:

Avoid breathing of vapors.

Use a positive pressure supplied-air respirator if there is a potential for exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with N95 particulate filters. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Wash hands after handling and before eating.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Polytetrafluoroethylene	CMRG	TWA, as respirable dust	5 mg/m ³	
Polytetrafluoroethylene	CMRG	TWA, as total dust	10 mg/m ³	

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Coarse Powder
Odor, Color, Grade:	White, odorless
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>
Boiling point	<i>Not Applicable</i>
Density	2.14 - 2.18 g/cm ³ [<i>@ 23 °C</i>]
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	2.14 - 2.18 [<i>@ 23 °C</i>] [<i>Ref Std: WATER=1</i>]
pH	<i>Not Applicable</i>
Melting point	320 - 345 °C [<i>Details: ASTM D 4894</i>]
Solubility in Water	Negligible
Bulk density	300 - 900 kg/m ³ [<i>Details: DIN 53466</i>]
Evaporation rate	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H ₂ O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Alkali and alkaline earth metals; Reactions with metals in powder form occur from 370 degrees C onwards.

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbonyl Fluoride	At Elevated Temperatures - above 380 C
Carbon monoxide	At Elevated Temperatures - above 380 C
Carbon dioxide	At Elevated Temperatures - above 380 C
Hydrogen Fluoride	At Elevated Temperatures - above 380 C
Perfluoroisobutylene (PFIB)	At Elevated Temperatures - above 380 C
Toxic Vapor, Gas, Particulate	At Elevated Temperatures - above 380 C

Hazardous Decomposition: Hydrogen fluoride has an ACGIH Threshold Limit Value of 3 parts per million (as fluoride) as a Ceiling Limit and an OSHA PEL of 3 ppm of fluoride as an eight hour Time-Weighted Average and 6 ppm of fluoride as a Short Term Exposure Limit. The odor threshold for HF is 0.04 ppm, providing good warning properties for exposure.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Reclaim if feasible. Incinerate in an industrial or commercial facility in the presence of a combustible material. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste. Combustion products will include HF. Facility must be capable of handling halogenated materials.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

97-5000-0170-2, 97-5000-0172-8, 97-5000-0175-1, 97-5000-0187-6, 97-5000-0193-4, 97-5000-0195-9, 97-5000-0797-2, 97-5000-0798-0, 97-5000-0799-8, 97-5000-0802-0, 97-5000-0803-8, 97-5000-0804-6, 98-0213-0533-3, 98-0213-1750-2

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

The components of this material are in compliance with the new chemical notification requirements for the Korean Existing Chemicals Inventory.

The components of this product are listed on the Australian Inventory of Chemical Substances.

The components of this product are listed on Japan's Chemical Substance Control Law List (also known as the Existing and New Chemical Substances List.)

All the components of this product are listed on China's Inventory of Chemical Substances.

The components of this product are in compliance with notification requirements in the Philippines.

The components of this product are listed on the Canadian Domestic Substances List.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

US LABEL INFORMATION

WARNING! Vapors liberated during processing may be hazardous if inhaled. Eye, nose, throat and lung irritation can occur from such vapors.

PRECAUTIONS: Exhaust processing vapors completely from work areas. **FIRE FIGHTING INSTRUCTIONS:** Wear full protective clothing including self-contained breathing apparatus and protection from acidic hydrogen fluoride. Use only in well ventilated areas. Avoid contamination of tobacco with polymer resin. Before using, read current Material Safety Data Sheet.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 3 Flammability: 0 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 Flammability: 0 Reactivity: 0 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS(r)) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS(r) ratings are to be used with a fully implemented HMIS(r) program. HMIS(r) is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 1: Product name was modified.

Section 1: Product use information was modified.

Copyright was modified.

Section 13: Waste disposal method information was modified.

Page Heading: Product name was modified.

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Section 14: ID Number Heading Template 1 was added.

Section 14: ID Number(s) Template 1 was added.

Section 2: Ingredient table was added.

Section 8: Exposure guidelines ingredient information was added.

Section 8: Exposure guidelines data source legend was added.

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