

MATERIAL SAFETY DATA SHEET

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Contact Number: 908-852-3125

SECTION I:

TRADE NAME: *F4PN Virgin Granular Compression Grade PTFE Resin*

NFPA, NPCA - HMIS

PRODUCT CLASS: *Polyolefin*

NFPA RATING

CHEMICAL NAME: *Polytetrafluoroethylene*

HEALTH: 1

SYNONYMS: *PTFE*

FLAMMABILITY: 1

CAS# 9002-84-0 Country of Origin: *Russia*

REACTIVITY: 0

SECTION II — HAZARDS IDENTIFICATION

Heated above 400°C (750°F) can evolve as degradation products:

CAS#	MATERIAL	%	TLV (ACGIH)	PEL (OSHA)
7664-39-3	Hydrogen fluoride	<1	3 PPM, 2.6 mg/m3, Ceiling as F	3 PPM, 8 Hr. TWA, as F
353-50-4	Carbonyl fluoride	<1	2 PPM, 5.4 mg/m3, 8Hr. TWA, STEL 5 ppm, 13 mg/m3	None Established
382-21-8	Perfluoroisobutylene	<0.01	Ceiling 0.01 PPM, 0.082 mg/m3	None Established

Remarks: *Material is not known to contain toxic chemicals under Section 313 of title 111 of the Superfund Amendments and Reauthorization Act of 1986 and CFR part 372.*

SECTION III — HAZARDS IDENTIFICATION — POTENTIAL HEALTH EFFECTS

Before using this product, read the Fluoropolymers Safe Handling Guide published by The Society of the Plastics Industry, SM. This fluoropolymer is not hazardous as shipped. The primary hazard associated is the inhalation of fumes from overheating or burning, which may cause "polymer fume fever". Inhalation 4 hour LC50 > 4,900 mg/cubic meter in rats. At very high exposure levels, animals were suffocated by accumulated dust in the lungs. Repeated exposure by ingestion caused no adverse effects.

Inhalation of fumes from overheating PTFE may cause polymer fume fever, a temporary flu like illness with fever, chills, and sometimes cough, of approximately 24 hours duration. There are some reports in the literature of persistent pulmonary effects in individuals, especially smokers, who have had repeated episodes of polymer fume fever. Because of complicating factors, such as mixed exposures and smoking history, these findings are uncertain. Protection against acute exposure should also provide protection against any potential chronic effects. Smokers should avoid contamination of tobacco products, and should wash their hands before smoking. Significant skin permeation after contact appears unlikely. There are no reports of human sensitization. Small amounts of carbonyl fluoride, hydrogen fluoride and

perfluoroisobutylene may also be evolved when PTFE is overheated or burned. Inhalation of low concentrations of HYDROGEN FLUORIDE can initially include symptoms of choking, coughing, and severe eye, nose and throat irritation. Possibly followed after a symptomless period of 1 to 2 days by fever, chills, difficulty in breathing, cyanosis, and pulmonary edema. Acute or chronic overexposure to HF can injure the liver and kidneys. Inhalation, ingestion, or skin or eye contact with CARBONYL FLUORIDE may initially include: skin irritation with discomfort or rash; eye corrosion with corneal or conjunctival ulceration; irritation of the upper respiratory passages; or temporary lung irritation effects with cough, discomfort, difficulty breathing, or shortness of breath. Symptoms may be delayed. PERFLUOROISOBUTYLENE is extremely toxic and inhalation is the most likely route of human exposure. Inhalation exposure may cause severe symptoms of pulmonary edema with wheezing, difficulty in breathing, coughing up sputum, and bluish discoloration of the skin. Coughing and chest pain may occur initially. However severe symptoms of pulmonary edema may be delayed for several hours and then become rapidly worse. Over-exposure may cause death. (Inhalation 2 hour LC50 =1.05 PPM in rats). Individuals with pre-existing diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures from thermal decomposition products.

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

SECTION IV - PHYSICAL DATA

APPEARANCE: Non Flowing Powder

BOILING RANGE: N/A

SOLUBLE IN WATER: Insoluble

ODOR: None

VAPOR DENSITY vs Air: N/A

SPECIFIC GRAVITY: 2.17 s .02

MELTING RANGE: 327° C - 343° C

COLOR: White

FLAME LIMITS: LEL & UEL N/A

SECTION V - FIRE FIGHTING DATA

PTFE is difficult to ignite. The flame goes out when initiating source is removed. It has limited flame spread and low smoke generation. Complies with NFPA definition of "limited combustible" material.

High self-ignition & auto-ignition temperatures.

AUTOIGNITION TEMPERATURE: N/A

FLASH POINT: N/A

VOCS: N/A

EXTINGUISHING MEDIA: *Foam, Water, Carbon Dioxide, and Dry Chemical*

EXPLOSION HAZARDS: *Static electricity may be generated while dumping the container*

FIRE FIGHTING PROCEDURES: *Use Self Contained Breathing Apparatus. Wear full protective equipment. Does not burn without an external flame. Protect from hydrogen fluoride fumes that react with water to form hydrofluoric acid. Wear Neoprene gloves when handling any refuse from a fire.*

SECTION VI – FIRST AID PROCEDURES:

PRECAUTION: Fine powder or dust may cause skin, eye or respiratory irritation

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. If irritation persists, consult a physician.

SKIN CONTACT: PTEE is not likely to be hazardous by skin contact, but washing thoroughly with soap and water is advisable. Contact from molten material should be treated as a thermal burn. Hot material tends to cling to flesh, especially after solidifying. Cool as soon as possible with water, and do not attempt to peel polymer from skin. Consult a physician.

INHALATION: PTEE is not likely to be hazardous by inhalation unless large amounts of dust are inhaled. If exposed to fumes from overheating or combustion, move to fresh air. If breathing is difficult, administer oxygen or artificial respiration. See medical attention and consult a physician. See section VIII, special protection.

SECTION VII – STABILITY AND REACTIVITY DATA

CHEMICAL STABILITY: Stable at normal temperatures and storage conditions

DECOMPOSITION: Heating above 400 °C (750°F), may cause evolution of particulate matter which can cause polymer fume fever. Trace amounts of Hydrogen fluoride, carbonyl fluoride, and perfluoroisobutylene may be evolved at about 380°C. 716°F with larger amounts at higher temperatures.

SECTION VIII - SPECIAL PROTECTION INFORMATION

GROUNDING: Recommended when pouring into solvents

VENTILATION: Use local exhaust to completely remove vapors and fumes liberated during hot processing from the work area.

PROTECTIVE GLOVES: Recommended

RESPIRATORY EQUIPMENT: NIOSH / A4SHA approved air purifying respirator with dust mist cartridge at temperature less than 400°C (750°F). At higher processing temperatures if ventilation is inadequate to maintain hydrogen fluoride and carbonyl fluoride concentrations below exposure limits, use a positive pressure air supplied respirator

EYE PROTECTION: Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of molten material

SECTION IX - SPILL OR LEAK PROCEDURES

SAFEGUARDS: Review fire-fighting and special protection data Use appropriate personal protection equipment during clean up.

SPILL CLEAN UP: Sweep up material to avoid slipping hazards. Dispose of accordingly or recover for reuse.

WASTE DISPOSAL METHODS: Dispose in accordance with Federal, State, and Local Regulations.

SECTION X HANDLING AND STORAGE:

HANDLING: Fine Powder or dust may cause .skin. eye or respiratory Irritation Use with adequate ventilation Static charges may be generated on pouring of powder Exercise proper grounding when pouring. Amid contamination of cigarettes or tobacco with dust from this material. Do not use a torch to clean this material from equipment without local exhaust ventilation and respirator

STORAGE: Keep container closed to prevent contamination

OTHER PRECAUTIONS:

PTFE OSHA PEL (Particulates, not otherwise regulated): 15 mg/cubic meter, 8 Hr TWA, total dust 5 mg/cubic mete, 8 Hr. TWA, respirable dust

PTFE ACGIH TLV (Particulates not otherwise regulated): 10 mg/cubic meter. 8 Hr TWA. total dust 5 mg/cubic mete, 8 Hr. TWA. respirable dust

SECTION XI – REGULATORY INFORMATION:

TOXIC SUBS'IANCES CONTROL ACT (TSCA): In compliance with TSCA inventory requirements for commercial purposes.

CALIFORNIA PROP 65: None known.

SUBSTANCES ON NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS). None known

SHIPPING INFORMATION DOT: Not regulated

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