



MATERIAL SAFETY DATA SHEET

Neoflon EFEP RP Series

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

MSDS-EFEP

ISSUED 5/27/09

DAIKIN TRADE NAME: Neoflon EFEP RP Series Powder and Pellet
 RP-5000, RP-5010, RP-4020, RP-4040

FEATURE AND APPLICATION: Fluorocarbon copolymer; thermal and chemical resistance

DAIKIN AMERICA, INC. 20 OLYMPIC DRIVE, ORANGEBURG, NEW YORK 10962

EMERGENCY PHONE: 1-256-306-5000

PRODUCT INFORMATION: 1-800-365-9570 9 am to 5 pm Eastern Standard Time

SECTION 2: HAZARDS IDENTIFICATION

PHYSICAL DESCRIPTION: Translucent, milky-white copolymer powder or pellet

ODOR: None

POTENTIAL HEALTH EFFECTS: May cause eye and skin irritation. Harmful if large amounts are swallowed. Harmful if thermal decomposition products are inhaled. Skin burns from contact with molten material while processing at elevated temperatures.

The fluoropolymer contained in this product in its raw form is nearly inert. Processing above 260 °C, may produce hydrogen fluoride and other toxic fluorinated compounds. Inhalation of these compounds may result in serious lung irritation. Inhalation of vapors and fumes may cause flu-like symptoms (e.g., chills, fever, cough) that may not occur until several hours after exposure and typically pass within about 36 to 48 hours.

EMERGENCY OVERVIEW: The powder may form combustible dust concentrations in air.

Excessive airborne concentrations of the powder may cause reduced visibility and irritation of the eyes, skin, and respiratory tract.

HMIS RATINGS: Health: 1
 Flammability: 0
 Reactivity: 0

SECTION 3: INFORMATION ON INGREDIENTS

COMPONENT	CAS. NO.	Wt%	OSHA (PEL)	ACGIH (TLV)
NON-HAZARDOUS INGREDIENTS				
EFEP copolymer	Trade Secret	> 99.9	ND	ND

*All ingredients in quantities $\geq 1\%$ (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

SECTION 4. FIRST AID PROCEDURES

INGESTION: Consult a physician immediately.

EYE CONTACT: Flush with large amounts of water for 10-15 minutes. Consult a physician if needed.

SKIN CONTACT: Wash affected area with soap and water. Do not attempt to remove molten material. Immediately flush affected area with plenty of cold water and cover with a clean dressing. Consult a physician.

INHALATION: Leave the contaminated area and seek fresh air. If breathing is difficult, contact a physician.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD USED):	Non-flammable
EXPLOSION:	Fine dust dispersed in air in sufficient concentration, and in the presence of an ignition source, is a potential dust explosion hazard. The minimum explosible concentration is 175 g/m ³ .
FLAMMABLE LIMITS:	LEL: None UEL: None
HAZARDOUS COMBUSTION PRODUCTS:	Toxic by-products including hydrofluoric acid, perfluoroisobutylene, and carbonyl fluoride may be formed by processing at very high temperatures.
EXTINGUISHING MEDIA:	Alcohol foam, CO ₂ , dry chemical or water spray
PROTECTIVE EQUIPMENT:	Use NIOSH/MSHA approved SCBA and bunker gear. Evolution of acidic gases may require complete washdown of protective clothing prior to removal.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Ensure cleanup is done only by trained personnel wearing appropriate personal protective equipment.
 Collect spilled material in a container and seal.
 Spilled material is a slipping hazard.

SECTION 7. HANDLING & STORAGE

HANDLING

Use product only for intended purpose.
 Close containers after each use.
 Wash hands after handling.
 If smoking tobacco becomes contaminated by this material, exposure to toxic gases through inhalation can occur. Therefore, do not smoke in the work areas and wash hands and face after handling in order to avoid transfer of material onto tobacco.
 Do not allow material to be exposed to excessive heat (e. g., from use of torch, welding, etc).
 Provide good room ventilation.

STORAGE

Keep away from heat, steam or sunlight.
 Store in a tightly closed container.

SECTION 8. EXPOSURE CONTROLS & PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION:	If necessary, use an air-purifying respirator with dust/mist cartridges to protect against airborne particulates, when handling below 260 °C. If material is heated above 260 °C, use a positive pressure supplied air respirator or SCBA.
EYE PROTECTION:	Safety glasses with sideshields or goggles
PROTECTIVE CLOTHING:	Appropriate gloves and clean room clothing. Thermal burn resistant gloves when handling extrudate.
VENTILATION:	Use local exhaust ventilation if heating the material during normal processing.
OTHER PROTECTIVE EQUIPMENT:	Eyewash station and safety shower.

SECTION 9. PHYSICAL & CHEMICAL PARAMETERS

MELTING POINT (°C):	150 ~ 210 °C
SPECIFIC GRAVITY:	Approximately 1.7 ~ 1.8
APPARENT DENSITY (H₂O=1):	Approximately 0.8 ~ 1.3 at 25 °C
VAPOR PRESSURE:	Not applicable
EVAPORATION RATE (Butyl acetate=1):	Not applicable
SOLUBILITY:	Insoluble in water or solvents
VOLATILES:	Not applicable

SECTION 10. STABILITY & REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Heat, sparks and open flame – material will decompose.
HAZARDOUS POLYMERIZATION:	Should not occur
INCOMPATIBILITIES:	Molten alkali metals, interhalogen compounds, and some kinds of amines; finely divided metallic powder or filler. Hazardous decomposition or by-products and toxic by-products including hydrofluoric acid, perfluoroisobutylene, and carbonyl fluoride may be formed at very high temperatures.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS OF EXPOSURE

Ingestion:	Harmful if swallowed. Small amounts (tablespoonfuls) during normal handling are not likely to cause injury. Larger amounts may cause injury.
Eye Contact:	May cause eye irritation.
Skin Contact:	May cause slight irritation.
Inhalation:	Normally not expected. When thermally decomposed, this material can cause polymer fume fever.

CHRONIC EFFECTS OF EXPOSURE: No data available**CARCINOGENICITY:** None of the components in this material are listed by NTP, OSHA or IARC.**OTHER POTENTIAL HAZARDS (OF THE PURE MATERIALS)**

Fluorocarbon copolymer:	No data
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Excessive exposure to thermal degradation products could result in delayed pulmonary edema in some cases, and on very high exposure, damage to the liver and kidneys. These substances may include: perfluoroisobutylene (TLV = 10 ppb), carbonyl fluoride (TLV = 2 ppm TWA, 5 ppm STEL), hydrogen fluoride (TLV = 2 ppm Ceiling, 0.5 ppm TWA).

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY:	No data. Expected to be low due to the near-zero water solubility of the copolymer. Material is considered inert and not expected to be biodegradable or toxic.
ENVIRONMENTAL FATE:	No data

SECTION 13. DISPOSAL CONSIDERATIONS

Comply with Federal, State and Local regulations concerning health and environment when disposing of materials. Regulations may also apply to empty containers, liners, or rinsate. Usually considered an inert packaging material that can be recycled or landfilled. **DO NOT INCINERATE** unless incinerator is capable of scrubbing hydrogen fluoride and other acidic combustion products.

SECTION 14. TRANSPORT INFORMATION

UN CLASSIFICATION:	Not applicable
DOT HAZARD DESCRIPTION:	Not applicable
CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG):	Not applicable

SECTION 15. REGULATORY INFORMATION

- TSCA:** All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substance Control Act (TSCA) Chemical Substance Inventory.
- OTHER:** States such as Pennsylvania, New Jersey, California, Vermont, Massachusetts, and Rhode Island may have specific requirements or components of this product listed; consult specific state regulatory requirements for additional information.
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SECTION 16. OTHER INFORMATION

For additional information, refer to the American Conference of Governmental Industrial Hygienists (ACGIH) documentation of TLV's (Threshold Limit Values) for individual components, Fluoropolymers Safe Handling Guide published by The Society of the Plastics Industry, and the DOT Emergency Response Guidebook.

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