

HYDRO SEALING TECHNOLOGY SDN BHD (426172-P)

(Sales Tax ID No : J31-1808-21018370)

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HYDRO
House of Seals

MATERIAL SAFETY DATA SHEET

Product: PTFE/FEP

Synonyms: Tubing, Beading, Monofilament, Special

MSDS ID : FEP CLEAR

For Use with Encap-O-Seal FEP Encapsulated O-rings and Gaskets.

2. Composition and Information on Ingredients

Ingredient: Tetrafluoroethylenehexafluoropropylene

CAS Number: 25067-11-2

Weight %: >99%

ACGIH FLV: -

PEL: -

STEL: -

3. Hazard Identification

Emergency Overview: This MSDS was prepared for an article which by OSHA standards is non-hazardous. There may be pertinent information within this document that applies to specific circumstances; however the product as is has no hazardous properties.

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

Potential Health Effects: Vapors and fumes liberated during hot processing (above 260 C) with this material may cause flu-like symptoms (chills, fever, and cough) that may not occur until several hours after exposure and typically pass within 36 to 48 hours. These vapors and fumes when liberated may also cause eye and skin irritation.

4. First Aid Information

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: This product is not likely to be hazardous, but cleanse skin after use. If contact with hot material occurs, immediately cool with plenty of cold water. Have burn treated by a physician.

Ingestion: Not an expected route of exposure.

Eye Contact: Flush eyes with plenty of water for at least 15 minutes. Consult a physician.

5. Fire Fighting Measures

Flash Point: None

General Information: Low fire hazard.

Extinguishing Media: Water spray, dry chemical, foam, or carbon dioxide.

Fire Fighting Procedures: Keep personnel removed and upwind of fire. Wear a self-contained breathing apparatus and full protective equipment. Wear neoprene gloves when handling refuse from fire.

WARNING: Hazardous decomposition products including carbon dioxide, carbon monoxide, carbonyl fluoride, perfluoroisobutylene, hydrogen fluoride, toxic gases, or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.

6. Accidental Release Measures

Spills/Leaks: Shovel or sweep up.

7. Handling and Storage

Store away from extreme heat.

8. Exposure Controls and Personal Protection

Engineering Controls: Use local exhaust ventilation when heating.

Personal Protective Equipment:

Eyes: Wear safety glasses with side shields when cutting or grinding.

Skin: Wear appropriate gloves when handling heated material to prevent thermal burns.

Clothing: Wear protective clothing and boots as required.

Respirators: If thermal decomposition occurs, a NIOSH approved mask for acidic gases must be used to avoid inhalation of vapors in accordance with OSHA regulations.

9. Physical and Chemical Properties

Physical State Solid

Specific Gravity 2.2

Color/Appearance Translucent Colorless

Odor Odorless

Boiling/Cond. Point Not Applicable

Melting/Freezing Point 240 - 305 C

Solubility Insoluble

Percent Volatile Not Applicable

10. Stability and Reactivity

Stable at room temperature under normal storage and handling conditions. Avoid excess heat.

Decomposition products include carbon monoxide, carbon dioxide, perfluoroisobutylene, carbonyl fluoride, hydrogen fluoride, and toxic gases or particles. Hazardous polymerization will not occur

11. Toxicological Information

When heated for a long time, a very small quantity of hydrogen fluoride, carbonyl fluoride, and perfluoroisobutylene are generated. The higher the temperature (above 260 C), the larger the amount it released.

Hydrogen Fluoride and Carbonyl Fluoride may cause the following symptoms: Burning sensation, cough, dizziness, headache, labored breathing, nausea, shortness of breath, sore throat, vomiting. Symptoms may be delayed. Inhalation of this gas may cause lung oedema. Perfluoroisobutylene may cause the following symptoms: Irritated respiratory tract. Inhalation of this gas may cause lung oedema. The effects may be delayed. Medical observation is indicated.

12. Ecological Information

This product may not degrade significantly in most natural environments. Ecotoxicity is expected to be low.

13. Disposal Considerations

Dispose of in compliance with Federal, State, and Local Government regulations. Usually is considered inert material that can be recycled or landfilled. Do not incinerate.

14. Regulatory Information

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

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

15. Other Information

The information in this Material Data Sheet is believed to be correct as of the date issued. HYDRO, Incorporated makes no warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. User is responsible for determining whether the HYDRO product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an HYDRO product, some of which are uniquely within the user's knowledge and control, it is essential that the user independently evaluate the HYDRO product to determine whether it is fit for a particular purpose, and suitable for the user's method of use or application.

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**MATREIAL SAFETY DATA SHEET****FEP – FKM**

SECTION I - PRODUCT IDENTIFICATION

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL LISTED IN THIS SECTION ARE IN CONCENTRATIONS OF 0.1% OR MORE IF CARCINOGENIC AND / OR 1% OR MORE IF TOXIC, IRRITANT, ETC. PER 29CFR 1910 1200.

		ACGIH TLV	OSHA PEL	OTHER	%WT
Fluorocarbon polymer Cas NO. 9011-17-0	IRRITANT	na	na		64.06%
Fluorocarbon polymer Cas NO. 9011-17-0	IRRITANT	N/A	N/A	N/A	12.63%
CARBON BLACK Cas NO. 1333-86-4	IRRITANT	N/A	N/A	N/A	21.35%

SECTION III - PHYSICAL DATA

BOILING POINT	N/A	PERCENT VOLATILE BY VOLUME	N/A
VAPOR PRESSURE/DENSITY	N/A	EVAPORATION RATE	N/A
SOLUBILITY IN WATER	NIL	POLYMERIC SOLID; CHARACTERISTIC ODOR	
SPECIFIC GRAVITY	1.817		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Not Determined
 AUTOIGNITION TEMP: Not Determined
 FLAMMABLE LIMITS IN AIR: Not Determined
 EXTINGUISHING MEDIA: Water, Fog, Dry Chemical, CO2, Foam

SPECIAL FIREFIGHTING PROCEDURES

Firefighters should wear self-contained breathing apparatus and protective clothing when fighting fires involving chemicals.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Exposure to temperatures above 200 C (392 F) may release vapors irritating to eyes, skin, and lungs. Potential electrostatic charge buildup, therefore grounding of equipment is recommended.

SECTION V - REACTIVITY DATA

STABILITY: Stable at ambient temperatures

and pressures.

INCOMPATIBILITY: None known.

DECOMPOSITION PRODUCTS

Oxides of Carbon, Sulfur, and Nitrogen are formed under burning conditions. Substantial quantities of Hydrogen Halide (TLV 5ppm) carbon monoxide, carbon dioxide, sulfur dioxide, organic acids, aldehydes and alcohols are evolved when heated at temperatures of 200 C (392 F) or higher.

SECTION VI - SPECIAL PROTECTION INFORMATION

ENGINEERING CONTROLS

Local exhaust ventilation/dust collection recommended for all hot processing /grinding operations.

PERSONAL PROTECTION EQUIPMENT

Avoid skin contact by the use of personal hygiene, including the washing of hands and other exposed body parts as often as possible, i.e. before breaks, after excessive exposure and after shift.

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In the absence of adequate ventilation for hot processing fumes and/or when particulate limits are exceeded, use NIOSH certified respiratory protection as appropriate.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Individuals with chronic respiratory disorders (i.e. asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate exposure. Sensitive individuals may be susceptible to allergic reaction upon contact with skin, eyes, or respiratory tract.

SECTION 7 - STORAGE, SPILLS, AND DISPOSAL INFORMATION

STORAGE: Store away from heat
SPILLS: Handle as solid waste.
DISPOSAL: In accordance with local, state or federal regulations regarding disposal of polymeric wastes.

ENVIRONMENTAL INFORMATION: Not determined.

SECTION VIII - HEALTH RELATED DATA

SPECIFIC HAZARD(S): Contact with skin may cause irritation.
Inhalation of fumes during hot processing can cause irritation to respiratory tract.

PRIMARY ROUTE(S) OF ENTRY: Inhalation of hot fumes, skin adsorption.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store below 70 F away from direct sources of heat and sunlight.

OTHER PRECAUTIONS: Wash thoroughly after handling.

A class of materials called nitrosamines are animal carcinogens and should be treated as possible human carcinogens. Because many rubber materials contain amine-based ingredients, trace residual amounts (well below 0.1%) of nitrosamine are likely to exist in most rubber compounds as a result of being formed in earlier processing steps; certain processing steps can form higher amounts of nitrosamines. Avoid mixing or exposing this product with: nitrates, nitrites, nitrogen oxides, or other nitrosamines as potentially hazardous levels of nitrosamines may be formed. Salt bath curing with nitrate/nitrite salts can be expected to produce hazardous amounts of volatile nitrosamines. Emissions from such processes must be exhausted. Employees must avoid inhaling fumes from hot rubber processing.

Certain materials that may be used in the manufacture of elastomeric compounds (i.e. carbon blacks and aromatic oils) may contain polynuclear aromatic compounds (PNA) also known as polycyclic aromatic hydrocarbons (PAH). These materials may be volatilized at elevated processing and vulcanizing temperatures. These materials are considered to be coal tar pitch volatiles (as benzene soluble fractions) and are considered to be suspected carcinogens for humans. Air contaminant code 29CFR1910.1000.

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