



KYNAR (R) 500 - PWD PVDF

Material Safety Data Sheet

Arkema Inc.

1 PRODUCT AND COMPANY IDENTIFICATION

Technical Polymers

Arkema Inc.
2000 Market St.,
Philadelphia, PA 19103-3222

EMERGENCY PHONE NUMBERS:

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 767-5089 (24Hrs)

Information Telephone Numbers	Phone Number	Available Hrs
Engineering Polymers (Pebax & Rilsan)	(800) 932 - 0420	Mon - Fri 8:00am - 6:00pm EST
Fluoropolymers (Kynars)	(800) 722 - 9668	Mon - Fri 8:00am - 6:00pm EST

Product Name KYNAR (R) 500 - PWD PVDF
Product Synonym(s)

Chemical Family Fluoropolymer
Chemical Formula
Chemical Name Vinylidene Fluoride Polymer
EPA Reg Num
Product Use

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical %	OSHA
Ethene, 1,1-difluoro-, homopolymer	24937-79-9	100	N

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

While this material is not classified as hazardous under Federal OSHA regulations, this MSDS contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

The components of this product are all on the TSCA Inventory list.

3 HAZARDS IDENTIFICATION

Emergency Overview

Odorless White Powder

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES.

CAUTION!

MELT PROCESSING MAY RELEASE VAPORS WHICH MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. As a finished product, it is a synthetic, high molecular weight polymer. Due to its chemical and physical properties, this material does not require special handling other than the good industrial hygiene and safety practices employed with any industrial material of this type. Melt processing under normal conditions should not release hazardous fumes in significant amounts. However, if the melt temperature or shear become excessive, hazardous by-products can be released. (See section 10 for additional information). If degradation occurs due to high temperature (which may be



caused by excessive shear) hazardous decomposition products will be emitted, which include hydrogen fluoride, and may include polymer fumes and oxides of carbon the concentrations of which may vary with processing time and temperatures.

4 FIRST AID MEASURES

IN CASE OF CONTACT, flush the area with plenty of water. Remove material from clothing. Wash clothing before reuse. If molten polymer gets on the skin, cool rapidly with cold water. Do not attempt to peel polymer from the skin. Obtain medical treatment for thermal burns.

IF SWALLOWED, do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, If dust or vapors are inhaled, remove to fresh air. If breathing is difficult, give oxygen and get medical attention.

GENERIC FIRST AID, - For hydrogen fluoride (HF). If thermal decomposition of this product occurs releasing HF, additional first aid measures are required. HF decomposition by-product is extremely corrosive and can cause severe burns which may not be immediately visible or painful. Exposure to HF may be fatal if absorbed through the skin, inhaled or swallowed. In all cases of major hydrogen fluoride exposure (including skin burns about the size of the palm of the hand) hypocalcemia may be present. Monitor calcium levels frequently and EKG for signs of calcium depletion. Patients with burns of the neck or face, or with signs of respiratory irritation, should be monitored for delayed pulmonary edema, and edema of the upper airway with respiratory obstruction. Respiratory care should be closely supervised and may include further administration of 2.5% calcium gluconate by nebulization. Do not administer local anesthetics after skin contact as the level of pain is an indication of the effectiveness of the calcium gluconate treatment. If pain continues longer than 30 minutes, consider injecting calcium gluconate (5%) into the skin and subcutaneous tissue beneath, around and within the affected area. If ingestion occurs, do not induce vomiting. Administer 4 to 8 ounces of water followed by 2 to 4 ounces of an antacid containing calcium or magnesium.

First Aid Supplies for Hydrogen Fluoride

Use of the following materials has been shown to be useful for HF treatment as explained above:

- 2.5% calcium gluconate gel
- 1.0% calcium gluconate in saline ocular solution
- 2.5% calcium gluconate in saline inhalant
- antacid containing calcium or magnesium

5 FIRE FIGHTING MEASURES

Fire and Explosive Properties

Auto-Ignition Temperature	NE	
Flash Point	NE	Flash Point Method
Flammable Limits- Upper	NA	
Lower	NA	

Extinguishing Media

Use water spray, carbon dioxide, foam or dry chemical.

Fire Fighting Instructions

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

When burned, the following hazardous products of combustion can occur: Oxides of carbon and Hydrogen



fluoride

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6 ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Contain spill. Sweep or scoop up and remove to suitable container. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7 HANDLING AND STORAGE

Handling

Avoid breathing processing fumes or vapors. Use only with adequate ventilation. Avoid prolonged contact with eyes, skin and clothing. Keep container tightly closed.

Storage

Store in a cool, dry place. This material is not hazardous under normal storage conditions; however, material should be stored in closed containers, in a secure area to prevent container damage and subsequent spillage.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposure. Dilution ventilation is acceptable, but local mechanical exhaust ventilation preferred, if practical, at sources of air contamination such as open process equipment.

Eye / Face Protection

Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

Skin Protection

Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

Respiratory Protection

Avoid breathing processing fumes or vapors. Where airborne exposure is likely, use NIOSH approved respiratory protective equipment appropriate to the material and/or its components and substances released during processing. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitation specification by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full-face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Other Protective Equipment

NOTE:

In the event of thermal decomposition resulting in an HF exposure or release, decontamination of the equipment involves the use of protective equipment. Contact an Industrial Hygienist or safety personnel for type of equipment necessary.

Other Exposure Limits - Ingredients

*OSHA and ACGIH have not established specific exposure limits for this material. However, OSHA and ACGIH have established limits for nuisance dusts or Particles Not Otherwise Specified (PNOS) which are the least stringent exposure limits applicable to dusts. The OSHA PEL/TWA for nuisance dusts is 15 mg/m³total

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

dust (TD), and 5 mg/m³ respirable dust (RD). The ACGIH TLV/TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS) is 10 mg/m³ inhalable particulate and 3 mg/m³ respirable particulate.

Airborne Exposure Guidelines for Ingredients

The components of this product have no established Airborne Exposure Guidelines

- Only those components with exposure limits are printed in this section.
- Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
- ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.
- WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.

Other Exposure Limit Information (product-based)

Exposure Limit Memo:

ACGIH ceiling limit for Hydrogen fluoride (HF) has a TLV of 3 ppm.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Odorless White Powder
pH	
Specific Gravity	1.76-1.80
Vapor Pressure	NE
Vapor Density	NE
Melting Point	155-165 deg C
Freezing Point	
Boiling Point	NE
Solubility In Water	Negligible
Evaporation Rate	NE
Percent Volatile	NE

10 STABILITY AND REACTIVITY**Stability**

This material is chemically stable under normal and anticipated storage, handling and processing conditions. Thermal decomposition of polymer will generate hydrogen fluoride (HF). Thermal decomposition of the polymer begins to generate HF at 600 degrees F (315 degrees C) and the evolution of HF becomes rapid at 700 degrees F (370 degrees C). Normal melt processing conditions rarely exceed a melt temperature of 535 degrees F (280 degrees C). The tip and mandrel are often set at higher temperatures. Laboratory testing has shown high polymer stability (TGA in nitrogen) at temperatures up to and including 600 degrees F (315 degrees C). Above this melt temperature, processors should exercise extreme caution because degradation may occur. We recommend that the product manufacturer's technical personnel are consulted if elevated melt temperature processing is required.

Note: When HF is first detected or the decomposition of the polymer is noted, continue to run the equipment with the heat source turned off and turn off the polymer feed. Run the equipment dry, ventilate the area, and remove non-essential personnel. Purging this product from the equipment can be accomplished using a high viscosity polyethylene. In case of a major decomposition event, evacuate all personnel immediately and call the emergency number listed on the first page of this MSDS.

Hazardous Polymerization

Does not occur.

Incompatibility

Contact with strong bases, esters and ketones may cause a low energy release. Silica (glass fibers) and titanium dioxide will accelerate thermal decomposition.

Hazardous Decomposition Products

Hydrogen fluoride (HF), possible oxides of carbon.

In case of decomposition, see Handling section (7) for additional information.

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

Data on this material and/or its components are summarized below. Ethene, 1,1-difluoro-, homopolymer
The toxicity data available on this material indicates that it is practically non-toxic if swallowed (rat LD50 6,000 mg/kg) and causes minimal or no biological response upon repeated contact or prolonged implantation in tissues. Various solvent extracts of this material also caused no adverse reactions in animals.

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

No data are available.

Chemical Fate Information

No data are available.

**13 DISPOSAL CONSIDERATIONS****Waste Disposal**

Recover, reclaim or recycle when practical. Dispose of in an approved landfill if allowed locally. Incinerate only if the incinerator is fitted to scrub out hydrogen fluoride and other acidic combustion gases. Comply with federal, state and local regulations. Dispose of in a permitted waste management facility if incineration or landfill is not practical.

Pigmented, filled and/or solvent laden product may require special disposal practices in accordance with federal, state and local requirements.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14 TRANSPORT INFORMATION

DOT Name Not Regulated
DOT Technical Name
DOT Hazard Class
UN Number
DOT Packing Group PG
RQ

15 REGULATORY INFORMATION**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)**

Immediate (Acute) Health	N	Fire	N
Delayed (Chronic) Health	N	Reactive	N
		Sudden Release of Pressure	N

The components of this product are all on the TSCA Inventory list.

Ingredient Related Regulatory Information:**SARA Reportable Quantities**

Ethene, 1,1-difluoro-, homopolymer

CERCLA RQ

SARA TPQ

NE

16 OTHER INFORMATION**Revision Information**

Revision Date 19 AUG 2005 Revision Number 6
Supersedes Revision Dated 11-OCT-2004

Revision Summary**Key**

NE= Not Established NA= Not Applicable (R) = Registered Trademark



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