

1. PRODUCT AND COMPANY IDENTIFICATION**Company**

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Fluoropolymers Division

Customer Service Telephone Number: (800) 932-0420
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: KYNAR® 1000 HD
Synonyms: Not available
Molecular formula: (C₂H₂F₂)_x
Chemical family: fluoropolymer
Product use: Resins for :, Extrusion, Injection, Mouldings

2. HAZARDS IDENTIFICATION**Emergency Overview**

Color: white
Physical state: solid
Form: pellets
Odor: none

***Classification of the substance or mixture:**
Not a hazardous substance or mixture.

GHS-Labeling**Supplemental Hazard Statements:**

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Supplemental information:**Potential Health Effects:**

The product, in the form supplied, is not anticipated to produce significant adverse human health effects. Contains high molecular weight polymer(s). Decomposition gives toxic and corrosive products. Effects due to processing releases: Irritating to eyes, respiratory system and skin. Inhalation of fume may cause flu-like symptoms.

Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Other:

Handle in accordance with good industrial hygiene and safety practice. This product may release fume and/or vapor of variable composition depending on processing time and temperature. Hazardous decomposition products including toxic and corrosive hydrogen fluoride may be liberated during processing at high temperatures (effects may not be immediately painful or visible).

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No. | Wt/Wt | GHS Classification** |
|------------------------------------|------------|----------------|----------------------|
| Ethene, 1,1-difluoro-, homopolymer | 24937-79-9 | > 99 - < 100 % | Not classified |

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Inhalation:

If inhaled, remove victim to fresh air.

Skin:

In case of contact, immediately flush skin with plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Obtain medical treatment for thermal burns. Remove material from clothing. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

Immediately flush eye(s) with plenty of water. Obtain medical treatment for thermal burns.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Notes to physician:

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 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 swallowed, 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 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. FIREFIGHTING MEASURES

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Protective equipment:

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).

Further firefighting advice:

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Hazardous organic compounds

Hydrogen fluoride

6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:

Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Sweep up and shovel into suitable properly labeled containers for prompt disposal. Possible fall hazard – floor may become slippery from leakage/spillage of product. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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

General information on handling:

Avoid breathing dust.

Avoid breathing processing fumes or vapors.

Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing.

Storage

General information on storage conditions:

Keep in a dry, cool 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.

Storage stability – Remarks:

Stable under recommended storage conditions.

Storage incompatibility – General:

Store separate from:

Strong bases

Titanium dioxide

Boron oxide

Silica (Glass fibre)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Particles Not Otherwise Specified / Nuisance Dust (Proprietary)

US. ACGIH Threshold Limit Values

| | |
|-----------------------|-----------------------|
| Form: | Inhalable particles. |
| Time weighted average | 10 mg/m3 |
| Form: | Respirable particles. |
| Time weighted average | 3 mg/m3 |

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| | |
|--------------|----------------------|
| Form: | Respirable fraction. |
| PEL: | 5 mg/m3 |

| | |
|--------------|------------|
| Form: | Total dust |
| PEL: | 15 mg/m3 |

US. OSHA Table Z-3 (29 CFR 1910.1000)

| | |
|-----------------------|---|
| Form: | Respirable fraction. |
| Time weighted average | 15millions of particles per cubic foot of air |

| | |
|-----------------------|---|
| Form: | Total dust |
| Time weighted average | 50millions of particles per cubic foot of air |

| | |
|-----------------------|----------------------|
| Form: | Respirable fraction. |
| Time weighted average | 5 mg/m3 |

| | |
|-----------------------|------------|
| Form: | Total dust |
| Time weighted average | 15 mg/m3 |

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:

Avoid breathing dust. Avoid breathing processing fumes or vapors. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, 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.

Skin protection:

Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors. Wash thoroughly after handling. 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.

Eye 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------|-------------------|
| Color: | white |
| Physical state: | solid |
| Form: | pellets |
| Odor: | none |
| Odor threshold: | No data available |

| | |
|---|---|
| Flash point | Not applicable |
| Auto-ignition temperature: | No data available |
| Lower flammable limit (LFL): | No data available |
| Upper flammable limit (UFL): | No data available |
| pH: | Not applicable |
| Density: | No data available |
| Bulk density: | 1.000 - 1.100 kg/m ³ 68 °F (20 °C) |
| Vapor pressure: | Not applicable |
| Vapor density: | Not applicable |
| Melting point/range: | 329 - 342 °F (165 - 172 °C) |
| Softening point VICAT:: | 284 °F (140 °C) |
| Evaporation rate: | No data available |
| Solubility in water: | 68 °F (20 °C) insoluble |
| Solubility in other solvents: [qualitative and quantitative] | Soluble in: DIMETHYLACETAMIDE DIMETHYLFORMAMIDE |
| Oil/water partition coefficient: | No data available |
| Thermal decomposition | 599 °F (315 °C) |
| Flammability: | See GHS Classification in Section 2 |

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|-------------------------------------|
| 10. STABILITY AND REACTIVITY |
|-------------------------------------|

Stability:

The product is stable under normal handling and storage conditions.

Hazardous reactions:

Hazardous polymerization does not occur.

Materials to avoid:

At high temperature : risk of violent reaction (decomposition)

Strong bases
Titanium dioxide
Silica (Glass fibre)
Boron oxide

Conditions / hazards to avoid:

Thermal decomposition of polymer will generate hydrogen fluoride (HF). Thermal decomposition of the polymer begins to generate HF at 662 degrees F (350 degrees C) and the evolution of HF becomes rapid at 752 degrees F (400 degrees C). Laboratory testing by Thermogravimetric Analysis (TGA) in nitrogen has shown that polymers provide high polymer thermal stability with decomposition occurring at temperatures above 662°F (350°C). Normal melt processing conditions are typically maintained below 500°F (260°C) and rarely exceed a melt temperature of 525°F (280°C). In most cases, processing polymer can be done without decomposition provided temperatures are maintained below 525°F (280°C). It is understood, however, that even at typical processing temperatures, decomposition can occur if the material is allowed to stagnate for extended periods of time at elevated temperatures. We recommend that you consult your technical personnel if a melt temperature above normal melt processing conditions are being considered, or if there is a concern regarding material stagnation in processing equipment being used.

In the event of polymer decomposition, which can be noted by generation of an acrid smell, significant darkening of the product, black specks in the melt, or under extreme conditions, creation of black char and visible outgassing, it is recommended that the following steps be taken. 1. Turn off the heat source and shut off the polymer feed. Ventilate the area and remove non-essential personnel. 2. If using an extruder, reduce screw speeds and run the equipment dry. Purging the equipment using a high molecular weight polyethylene or polypropylene pure polymer. Avoid using purging compounds that have a silica additive. Note: In case of a major decomposition event, evacuate all personnel immediately and call the emergency number listed on the first page of this SDS.

Hazardous decomposition products:

Temperature exceeding 315 °C:
Thermal decomposition giving toxic and corrosive products :
Hydrogen fluoride
Carbon oxides
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for Ethene, 1,1-difluoro-, homopolymer (24937-79-9)**Acute toxicity****Oral:**

Practically nontoxic. (Rat) LD50 > 6,000 mg/kg.

Repeated dose toxicity

Subcutaneous administration to rabbit / No adverse systemic effects reported.

Repeated administration to rat, mouse, rabbit / No adverse effects reported. (Solvent extracts were

tested.)

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in a laboratory test using: bacteria

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: mice

Other information

The information presented is from representative materials with this Chemical Abstract Service (CAS) Registry number. The results vary depending on the size and composition of the test substance.

12. ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

No data are available.

Ecotoxicology

No data are available.

13. DISPOSAL CONSIDERATIONS**Waste disposal:**

Where possible recycling is preferred to disposal or incineration. 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. 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 regulations. Dispose of in accordance with federal, state and local regulations. 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. 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

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

15. REGULATORY INFORMATION**Chemical Inventory Status**

EU. EINECS

EINECS

Conforms to

| | | |
|--|------------|---|
| United States TSCA Inventory | TSCA | The components of this product are all on the TSCA Inventory. |
| Canadian Domestic Substances List (DSL) | DSL | All components of this product are on the Canadian DSL. |
| China. Inventory of Existing Chemical Substances in China (IECSC) | IECSC (CN) | Conforms to |
| Japan. ENCS - Existing and New Chemical Substances Inventory | ENCS (JP) | Conforms to |
| Japan. ISHL - Inventory of Chemical Substances | ISHL (JP) | Conforms to |
| Korea. Korean Existing Chemicals Inventory (KECI) | KECI (KR) | Conforms to |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | PICCS (PH) | Conforms to |
| Australia Inventory of Chemical Substances (AICS) | AICS | Conforms to |

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

No SARA Hazards

SARA Title III – Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right to Know

Chemical Name
Ethene, 1,1-difluoro-, homopolymer

CAS-No.
24937-79-9

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION**Latest Revision(s):**

| | |
|-------------------|--------------|
| Reference number: | 000000061029 |
| Date of Revision: | 03/18/2015 |
| Date Printed: | 03/18/2015 |

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