

SECTION 1: Identification

1.1. Identification

Product form	: Article
Product name	: PVDF Fittings (White and Red)
CAS-No.	: 24937-79-9
Formula	: (C ₂ H ₂ F ₂) _x

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Various uses from plumbing to other piping application and types of flow control
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1.3. Supplier

Manufacturer

NIBCO INC.
1516 Middlebury St.
Elkhart, IN, 46516
USA

T General: 574-295-3000 / 800-642-5463 - F Technical Services: Voice 888-446-4226 / Fax 888-336-4226

MSDSCoordinator@NIBCO.com - <http://www.nibco.com>

1.4. Emergency telephone number

Emergency number	: ChemTel: 800-255-3924; International: +01-813-248-0585
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SECTION 2: Hazard(s) identification

Manufactured Article: GHS classification and labelling not applicable. This product is exempt from classification and labelling as per C.F.R. 1910.1200(b)(6)(v).

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

Not applicable

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification	: 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).
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2.4. Unknown acute toxicity (GHS US)

Not applicable

PVDF Fittings (White and Red)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%
1,1-Difluoroethylene polymer	CAS-No.: 24937-79-9	100

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Not applicable for product in finished form. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.
First-aid measures after eye contact	: Not expected to be a primary route of exposure. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Not expected to be a primary route of exposure. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: Not a normal route of exposure. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	: May be harmful if swallowed. May result in obstruction and irritation if ingested. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Carbon dioxide (CO2). Foam. Dry chemical.
Unsuitable extinguishing media	: Do not use water jet.

PVDF Fittings (White and Red)

Safety Data Sheet

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5.2. Specific hazards arising from the chemical

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Hydrogen fluoride. Hazardous organic compounds.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Not applicable for product in finished form.
Methods for cleaning up : Pick up large pieces, then place in a suitable container.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.
Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place.
Incompatible materials : Refer to Section 10 on Incompatible Materials.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PVDF Fittings (White and Red) (24937-79-9)

No additional information available

PVDF Fittings (White and Red)

Safety Data Sheet

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1,1-Difluoroethylene polymer (24937-79-9)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves. Consult glove manufacturer's product information on material suitability and material thickness.

Eye protection:

Safety glasses or goggles are recommended when using product.

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. SDSs cannot provide detailed and complete respiratory protection guidelines. Selection of respiratory protection must be done by a qualified person who has assessed the work environment.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Plastic articles.
Color	: Red White
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: 156 – 170 °C (313 - 338 °F)
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 1.76 – 1.78 g/cm³ at 20°C (68 °F)
Solubility	: Soluble in dimethylformamide & dimethylacetamide. Insoluble in water.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: > 350 °C (662 °F)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

PVDF Fittings (White and Red)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Bulk density	: 1 – 1.1 kg/m ³ at 20°C (68 °F)
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SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Thermal decomposition will generate hydrogen Fluoride (HF). Thermal decomposition of the polymer begins to generate HF at 662 °F (310 °C) and the evolution of HF becomes more rapid at 752 °F (400 °C). Laboratory testing by Thermogravimetric Analysis (TGA) in nitrogen has shown that these polymers provide high polymer thermal stability with decomposition occurring at temperatures above 662°F (350°C). To avoid thermal decomposition, do not overheat. Decomposition is promoted at high temperature with Silica/Glass and TiO₂ (>536°F / >280°C). Do not clean tooling with open flame to avoid thermal decomposition. Avoid prolonged heating above the upper processing limit of 536°F (280°C).

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Powdered metals. Alkali metals. Aluminum. Strong bases. Titanium dioxide. Glass fibers. boron oxide.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Hydrofluoric Acid. Hazardous organic compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: Not a normal route of exposure. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

PVDF Fittings (White and Red)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Symptoms/effects after eye contact	: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	: May be harmful if swallowed. May result in obstruction and irritation if ingested. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: May cause long-term adverse effects in the aquatic environment.
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12.2. Persistence and degradability

PVDF Fittings (White and Red) (24937-79-9)

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

PVDF Fittings (White and Red) (24937-79-9)

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information	: No other effects known.
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SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: 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.
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SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not applicable
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PVDF Fittings (White and Red)

Safety Data Sheet

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14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

DOT

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

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Other information : None.

Safety Data Sheet (SDS), USA

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