

# SAFETY DATA SHEET

**ID# MSDS-1000**

Issue Date: June 1, 2015

Revised Date:

Revision No.

## Section 1: Identification

**Product Identifier:** Delrin® AF POM-H, AF100 POM-H and DE588 AF Products

**Manufacturer:**

Quadrant EPP USA, Inc.  
2120 Fairmont Ave.  
Reading, PA 19605  
(610) 320-6600

In case of an emergency, please call Chemtrec 1-800-424-9300.

**Recommended Use:** Engineering thermoplastic stock shape

## Section 2: Hazard Identification

### GHS – Classifications

**Classification:** None

**Signal Word:** None

**Pictograms and Symbols:** None

**Hazard Statements:** None

**Precautionary Statements:** None

## Section 3: Composition/Information on Ingredients

This is a polymeric material. All constituents are encapsulated within the polymer system and therefore present no likelihood of exposure under normal conditions of processing and handling.

Chemical Name	CAS No.	Weight %
Polytetrafluoroethylene	9002-84-0	<25
Formaldehyde	50-00-0	<0.005

## Section 4: First-Aid Measures

**Eyes:** Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation continues.

**Skin:** No health risks concerning skin contact at room temperature. Wash with soap and water. If molten material comes in contact with the skin, cool under running water. Do not attempt to remove the molten material from the skin. Get medical attention immediately.

**Inhalation:** If fumes from overheating are inhaled, remove to fresh air. Seek medical attention if respiratory symptoms occur or breathing becomes difficult.

**Ingestion:** Rinse the victim's mouth with plenty of water. Do not induce vomiting. Seek medical attention.

## **Section 5: Fire-Fighting Measures**

Fire-fighters should protect themselves from decomposition and combustion products by using a full-face self-contained breathing apparatus and impervious protective clothing. Keep personnel removed and upwind of fire. Extinguish fires with water, foam, carbon dioxide or dry chemical media.

Burns with invisible flame.

Hazardous gases/vapors produced in fire are: carbon monoxide; formaldehyde, hydrogen fluoride and carbonyl fluoride.

Dust is flammable and explosive when finely divided and suspended in air.

## **Section 6: Accidental Release Measures**

If a spill occurs, stop the leak at the source and sweep up for disposal. Do not flush to sewers or waterways.

## **Section 7: Handling and Storage**

### **Precautions for Safe Handling**

Personal hygiene such as washing the hands and face immediately after working with this material and before eating is recommended.

Dust may form explosive mixtures with air. Avoid dust formation and control ignition sources. Polyolefin dust particles suspended in air are combustible and may be explosive. Keep away from heat, sparks, flame, and other ignition sources. Prevent dust accumulations and dust clouds. Employ ground, bonding, venting, and explosive relief provisions in accordance with accepted engineering practices and NFPA provisions in any process capable of generating dust and/or static electricity. Explosion hazards apply only to dusts, not granular forms of this product.

The handling of powder in both loading and unloading operations, as well as fabrication, may cause dust to be formed and necessary precautions for personal protection should be used. As with all finely divided materials precautions should be taken to avoid inhalation and eye contact.

If in dust form, transfer from storage with a minimum amount of dusting. Ground all transfer, blending, and dust collecting equipment to prevent static sparks in accordance with NFPA 70 "National Electric Code." Review and comply with all relevant NFPA provisions, including but not limited to NFPA 484 and NFPA 654 related to combustible dust hazards. Remove all

ignition sources from material handling, transfer, and processing areas where dust may be present. Local exhaust ventilation should be provided in work area.

### Precautions for Safe Storage

Store in a sprinkler protected warehouse. Since products are organic they will burn with a hot flame if ignited. Avoid contact with ignition sources such as open flames. Keep a fire extinguisher near if welding is done in the area of organic products. If a heat source is present, keep the area well ventilated.

## Section 8: Exposure Controls/Personal Protection

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
Particulates	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> – Total 5 mg/m <sup>3</sup> – Respirable	Not Determined
Polytetrafluoroethylene	Not Determined	Not Determined	Not Determined
Formaldehyde	0.3 ppm (Ceiling)	0.75 ppm (TWA) 2.0 ppm (STEL)	0.016 ppm (TWA) 0.1 ppm (Ceiling)

### Engineering Measures:

Provide local exhaust ventilation to keep airborne particulate concentrations below the OELs.

### Personal Protective Equipment: Eyes/Face

Safety glasses with side shields.

### Personal Protective Equipment: Skin

When handling molten material, protective clothing such as long sleeves or laboratory coat should be worn. Use heat-resistant gloves, boots and face protection.

### Personal Protective Equipment: Respiratory

If levels are above published OELs, then a NIOSH approved respirator.

Good industrial hygiene practice should be followed which includes preventing eye contact, minimizing skin contact and minimizing inhalation of dust, vapors or mist.

## Section 9: Physical and Chemical Properties

Appearance and Odor	Solid in rod, plate, tube or strip form with slight formaldehyde odor
Odor Threshold	No Information Available
Specific Gravity (Relative Density)	1.39 – 1.44
Solubility in Water	Insoluble
VOC Content (%)	<1
pH	No data available
Melting Point/Freezing Point	347°-361°F
Vapor Pressure	No data available
Vapor Density	No data available
Evaporation Rate	No data available
Boiling Point	No data available
Flammability	Combustible

Flash Point	608°F (ASTM-D-1929)
Explosion Data	LEL – No data available UEL – No data available
Auto ignition Point	No data available
Partition Coefficient: n-octanol/water	No data available
Decomposition Temperature	446° F
Viscosity	No data available

## Section 10: Stability and Reactivity

### Reactivity:

None known

### Chemical Stability:

Material is stable under normal industrial conditions and is not susceptible to hazardous polymerization.

### Conditions to Avoid:

Heating above 446°F. Avoid prolonged exposure at or above recommended processing temperatures. Incompatible materials

### Incompatibility:

Strong acids, and bases (decomposes forming formaldehyde) and strong oxidizing agents. At melt temperatures, acetal resins are incompatible with halogenated polymers such as PVC and PVDC and any elastomers containing halogenated polymers. Even small amounts of such contaminants can cause sudden and spontaneous formaldehyde gas formation. Workplace fume concentrations well above threshold levels are a likely result.

### Hazardous Decomposition Products:

At temperatures above 446°F/230° C, heavy fuming of formaldehyde will occur.

## Section 11: Toxicological Information

### Acetal Polymer

There are no known effects from exposure to the Delrin polymer itself. If overheated, the polymer releases formaldehyde which may cause skin, eye, and respiratory irritation and allergic reactions.

### Polytetrafluoroethylene (PTFE)

Inhalation of PTFE dust may cause generalized irritation of the nose, throat and lungs with cough, difficulty breathing or shortness of breath.

Heating PTFE above 300 degrees C may liberate a fine particulate fume. Inhalation may produce polymer fume fever, a temporary flu-like condition with fever, chills, nausea, shortness of breath, chest tightness, muscle or joint ache, and sometimes cough and elevated white blood cell count. The symptoms are often delayed 4 to 24 hours after exposure. These signs are generally temporary, lasting 24-48 hours and resolve without further complications. However, some individuals with repeated episodes of polymer fume fever have reported persistent pulmonary effects. Protection against polymer fume fever should also provide protection against any potential chronic effects.

Exposure to decomposition products from PTFE heated above 400 degrees C may cause pulmonary inflammation, hemorrhage or edema. These more serious consequences of exposure may occur from extreme thermal decomposition of PTFE which can liberate fume particles, and toxic gases (carbonyl fluoride, hydrogen fluoride, and other fluorinated gases) especially under conditions of poor ventilation and/or confined spaces. These decomposition products may initially produce chest tightness or pain, chills, fever, nausea, with shortness of breath, cough wheezing and progression into pulmonary edema. Edema may be delayed in onset and requires medical treatment. In severe cases, if medical intervention is delayed, pulmonary edema may become life threatening. Recovery is generally complete within a few days; in some rare cases, persistent lung function abnormalities have been reported.

Compared to nonsmokers, polymer fume fever symptoms appear to be more prevalent and serious in smokers. Smokers must avoid contamination of tobacco with residual polymer from their hands or from fumes, and should wash their hands before smoking.

**Signs and Symptoms of Overexposure:** Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness and swelling. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

**Aggravated Medical:** None.

**Acute Effects:** Non-toxic.

**Skin Corrosion/Irritation:** Not irritating to the skin.

**Serious Eye Damage/Irritation:** Particulates can be mechanically irritating to the eyes.

**Ingestion:** None.

**Inhalation:** Inhalation of particulates may produce respiratory tract irritation.

**Respiratory or Skin Sensitization:** Not expected to be a sensitizer.

**Chronic Effects:**

**Germ Cell Mutagenicity:** Not expected to be a germ cell mutagen.

**Carcinogenicity:** Not classifiable as carcinogen to humans (group 3 IARC).

**Reproductive Toxicity:** There aren't known reproductive toxicity effects.

**STOT-single Exposure:** At dust form, may cause respiratory irritation with cough and sneezing.

**STOT –multiple Exposure:** There aren't known repeated exposure effects.

**Aspiration Hazard:** No data available. Not expected to be an aspiration hazard.

**Primary Route of Entry:** Inhalation of particulates.

## **Section 12: Ecological Information**

**Ecotoxicity:**

There aren't known ecological toxicity values.

**Persistence and degradability:**

It's expected high persistence and slow degradability.

**Bioaccumulative Potential:**

It's expected moderate to high bioaccumulative potential.

**Mobility in Soil:**

No data available

**Other Adverse Effects:**

No data available

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)

**Section 13: Disposal Considerations**

Dispose of in accordance with federal, state and local regulations.

**Section 14: Transportation Information**

US Department of Transportation Classification (49CFR)

Not classified as hazardous for transport.

**Section 15: Regulatory Information**

SARA Section 302 & 304:

No chemicals

SARA Section 313:

The following component is subject to reporting levels established by SARA Title III, Section 313:

- None

TSCA:

All components of this product are either listed or are exempt on the TSCA inventory.

**Section 16: Other Information****Label Information**

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Revision Date	Reason for Revision
June 1, 2015	SDS format

The information set forth herein has been gathered from standard reference materials and/or supplier test data and is, to the best knowledge and belief of Quadrant EPP, accurate and reliable. Such information is offered solely for your consideration, investigation and verification, and it is not suggested or guaranteed that the hazard precautions or procedures mentioned are the only ones that exist. Quadrant EPP makes no warranties, expressed or implied, with respect to the use of such information or the use of the specific material identified herein in combination with any other material or process, and assumes no responsibility therefor.