

SAFETY DATA SHEET

ID# MSDS-0900

Issue Date: June 1, 2015

Revised Date:

Revision No.

Section 1: Identification

Product Identifier: Delrin® 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 % |
|----------------------------|------------|-------------------------|
| Polyoxymethylene Copolymer | 24969-26-4 | >95 |
| Stabilizers | | 0-3 |
| Carbon black | 1333-86-4 | 0-3 |
| Formaldehyde | 50-00-0 | Trace level contaminant |

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.

Notes to physician:

This product is essentially inert and nontoxic. However, if it is overheated or burns, gases such as carbon monoxide and formaldehyde may be released. Those exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal and the exposure occurred in an enclosed space, asphyxia (carbon dioxide replacing oxygen) is a possibility, Formaldehyde is a respiratory irritant gas. If patients may have inhaled high concentrations of irritating fumes they should be monitored for delayed onset pulmonary edema.

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 oxides and formaldehyde.

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 ³ | 15 mg/m ³ – Total 5 mg/m ³ – Respirable | Not Determined |
| Carbon black | 3.5 mg/m ³ | 3.5 mg/m ³ | 3.5 mg/m ³ |
| 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 essentially no 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 | 342°-363°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:

Flame. Do not allow mixing of this material with PVC, other halogen containing materials, and partially and/or fully crosslinkable thermoplastic elastomers. Do not heat above 460° F (238° C). Avoid prolonged heating at or above the recommended temperature.

Incompatibility:

PVC, strong acids, oxidizing agents.

Hazardous Decomposition Products:

At temperatures above 460°F/238° C, heavy fuming of formaldehyde may occur.

Section 11: Toxicological Information

Acetal Polymer

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

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.

Other: Formaldehyde, which is degradation product, is listed as a potential cancer hazard by OSHA, a known human carcinogen by The International Agency for Research on Cancer (IARC, Group 1), and a substance which can reasonably be anticipated to be a carcinogen by The National Toxicology Program (NTP). Formaldehyde should not pose a risk if exposures are kept below the OELs.

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

Product Identifier: Delrin 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.

Classification: None

Signal Word: None

Pictograms and Symbols: None

Hazard Statements: None

Precautionary Statements: None

| 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.