SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Viton® fluoroelastomer  
Product Grade/Type: VTR-9193  
MSDS Number: 150000002422  
Product Use: Rubber products  
Manufacturer: DuPont Performance Elastomers L.L.C  
Bellevue Park Corporate Center, 300 Bellevue Parkway  
Wilmington, Delaware 19809

Product Information: 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
Medical Emergency: 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency: CHEMTREC: 1-800-424-9300 (outside the U.S. 703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Potential Health Effects  
Eyes
Barium sulfate: May irritate eyes. Dust may cause; mechanical irritation with tearing, pain or visual impairment.

Inhalation
Polyvinylidenefluoride/hexafluoropropene: Inhalation of decomposition products from overheating may cause lung irritation or shortness of breath. Fluid in the lungs (pulmonary oedema) with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin (symptoms might be delayed)

Repeated exposure
Barium sulfate: lung effects

Target Organs
Barium sulfate: Lungs

Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinylidenefluoride/hexafluoropropene</td>
<td>9011-17-0</td>
<td>&gt;96%</td>
</tr>
</tbody>
</table>
SECTION 4. FIRST AID MEASURES

Skin contact: Wash off with soap and water. Cool skin rapidly with cold water after contact with hot polymer. Do not peel polymer from the skin. Consult a physician if necessary.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician.

Ingestion: If victim is conscious: Drink water as a precaution. Consult a physician.

General advice: If symptoms persist, call a physician.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties
Flash point: > 204 °C (> 399 °F) open cup

Fire and Explosion Hazard: Burning produces obnoxious and toxic fumes.

Extinguishing Media: Carbon dioxide (CO2), Foam, Water, Dry chemical

Firefighting Instructions: Wear self-contained breathing apparatus and protective suit. Wear neoprene gloves during cleaning up work after a VITON® fire. Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses. The solid polymer can only be burned with difficulty.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel): Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Spill Cleanup: Shovel into suitable container for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

Accidental Release Measures: Try to prevent the material from entering drains or water courses.
SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Protect from contamination. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe dust. Do not breathe fumes evolved from hot polymer. General precaution for all plastics and elastomers: Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. When using do not eat, drink or smoke.

Handling (Physical Aspects) : General precaution for all plastics and elastomers: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Avoid dust formation.

Storage : Keep in a dry, cool and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Use only in area provided with appropriate exhaust ventilation.

Personal protective equipment
Eye protection : Safety glasses with side-shields

Skin protection : If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear. If VITON® is used above 315°C the surface may contain hydrogen fluoride condensate which may cause severe burns. In this case wear neoprene gloves. Skin should be washed after contact.

Respiratory protection : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL (OSHA)</th>
<th>TLV (ACGIH)</th>
<th>Exposure Limit Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen fluoride, anhydrous</td>
<td>6 ppm STEL as F</td>
<td>2 ppm Ceiling as F</td>
<td></td>
</tr>
<tr>
<td>Barium sulfate</td>
<td>15 mg/m³ 8 hr. TWA Total dust.</td>
<td>10 mg/m³ TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5 mg/m³ 8 hr. TWA as Ba</td>
<td>0.5 ppm TWA as F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 mg/m³ 8 hr. TWA Respirable fraction.</td>
<td>0.5 mg/m³ TWA as Ba</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form: sheets, pellets
Color: white, off-white
Odor: none
Density: 1.75 - 1.90 g/cm³
Water solubility: insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid: Processing temperature > 200 °C (> 392 °F)
Avoid heating for prolonged periods above the recommended upper
processing limit.

Incompatibility: Powdered metals Finely divided aluminium Alkali metals Alkaline earth metals

Decomposition: Hazardous decomposition products Hydrogen fluoride, Carbonyl fluoride, Fluorinated hydrocarbons, Fluorinated olefins.

Polymerization: Polymerization will not occur. During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat.

SECTION 11. TOXICOLOGICAL INFORMATION

Polyvinylidenefluoride/hexafluoropropene

Dermal: No adverse effects expected.
Oral ALD: > 5,000 mg/kg, rat
Skin irritation: non-irritant
Repeated dose toxicity: Inhalation
No adverse effects expected.
Oral
Liver enlargement

Carcinogenicity: No adverse effects expected.
Mutagenicity: No adverse effects expected.
Toxicity to reproduction: No adverse effects expected.
Teratogenicity: No adverse effects expected.

Barium sulfate:
Oral LD50: > 5,000 mg/kg, rat
Skin irritation: Species: human, non-irritant
Repeated dose toxicity: Inhalation, animals (unspecified species), lung effects
Mutagenicity: Evidence suggests this substance does not cause genetic damage in animals. Information given is based on data obtained from similar product.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity
Polyvinylidene fluoride/hexafluoropropene:
This product has no known eco-toxicological effects.

Barium sulfate:
48 h EC50:
Daphnia magna (Water flea) 32 mg/l

Additional ecological information:
We have no quantitative data concerning the ecological effects of this product.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal:
If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled or incinerated, when in compliance with local regulations. Incinerate only in incinerators capable of scrubbing out acidic combustion products.

Environmental Hazards:
Offer rinsed packaging material to local recycling facilities. If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION
Not classified as dangerous in the meaning of transport regulations.
SECTION 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>TSCA Status</th>
<th>In compliance with TSCA Inventory requirements for commercial purposes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 313 Regulated Chemical(s)</td>
<td>SARA 313: 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.</td>
</tr>
<tr>
<td>California Prop. 65</td>
<td>WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm. Ethylene oxide</td>
</tr>
<tr>
<td>PA Right to Know Regulated Chemical(s)</td>
<td>Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): No components present on the PA state hazardous substance lists.</td>
</tr>
<tr>
<td>NJ Right to Know Regulated Chemical(s)</td>
<td>Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): No components present on the NJ state hazardous substance lists.</td>
</tr>
</tbody>
</table>

SECTION 16. OTHER INFORMATION

Restrictions for use : Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont Performance Elastomer’s caution bulletin No. H-69237.

Before use read DuPont Performance Elastomer’s safety information.® Registered trademark of DuPont Performance Elastomers

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Significant change from previous version is denoted with a double bar.