

Viton® fluoroelastomer

Version 2.1

Revision Date 12/12/2008

Ref. 150000002655

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|---------------------|---|---|
| Product name | : | Viton® fluoroelastomer |
| Product Grade/Type | : | VTR-9168 |
| MSDS Number | : | 150000002655 |
| 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

Emergency Overview

May cause skin and eye irritation in susceptible persons.

Potential Health Effects

Skin

4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol : Causes skin irritation.

Eyes

Benzyltriphenylphosphonium 4,4'-<Trifluoro-1-(Trifluoromethyl)Ethylidene>Diphenol Salt (1:1) : May irritate eyes.

Barium sulfate : May irritate eyes. Dust may cause:, mechanical irritation with tearing, pain or visual impairment.

Inhalation

1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene and tetrafluoroethene : 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

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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

| Component | CAS-No. | Concentration |
|--|------------|---------------|
| 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene and tetrafluoroethene | 25190-89-0 | >95% |
| 4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol | 1478-61-1 | <2 % |
| Benzyltriphenylphosphonium 4,4'-<Trifluoro-1-(Trifluoromethyl)Ethylidene>Diphenol Salt (1:1) | 75768-65-9 | <1 % |
| Barium sulfate | 7727-43-7 | <1 % |

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 : Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

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 : When symptoms persist or in all cases of doubt seek medical advice.

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.

Suitable extinguishing media : Carbon dioxide (CO₂), Foam, Water, Dry chemical

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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

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

Hand protection :

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Eye protection : Safety glasses with side-shields
 Skin and body 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.

Exposure Guidelines

Exposure Limit Values

Hydrogen fluoride, anhydrous

| | | | |
|-----|---------|---------|------------------|
| PEL | (OSHA) | 6 ppm | STEL as F |
| PEL | (OSHA) | 3 ppm | TWA |
| | | | Skin designation |
| TLV | (ACGIH) | 2 ppm | Ceiling as F |
| TLV | (ACGIH) | 0.5 ppm | TWA as F |

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

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

Hazardous reactions : 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.

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SECTION 11. TOXICOLOGICAL INFORMATION

1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene and tetrafluoroethene

Oral ALD : > 5,000 mg/kg, rat

Skin irritation : Species: rabbit
non-irritant

4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol

Oral ALD : 3,400 mg/kg, rat

Skin irritation : irritant

Repeated dose toxicity : Dermal
No toxicologically significant effects were found.Oral - gavage, rat
Reduced body weight gain, Organ weight changes, HypoactivityMutagenicity : Did not cause genetic damage in cultured bacterial cells., Tests on
mammalian cell cultures showed mutagenic effects.Toxicity to reproduction : Experiments have shown reproductive toxicity effects on laboratory
animals.

Benzyltriphenylphosphonium 4,4'-<Trifluoro-1-(Trifluoromethyl)Ethylidene>Diphenol Salt (1:1)

Oral LD50 : 4,385 mg/kg, rat

Skin irritation : Species: rabbit
non-irritantEye irritation : Species: rabbit
Mild eye irritation

Mutagenicity : Did not cause genetic damage in cultured bacterial cells.

Barium sulfate

Oral LD50 : > 5,000 mg/kg, rat

Skin irritation : Species: human
non-irritantRepeated dose toxicity : Inhalation, animals (unspecified species)
lung effects

Mutagenicity : Evidence suggests this substance does not cause genetic damage in

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animals., Information given is based on data obtained from similar product.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene and tetrafluoroethene
 : The substance is a polymer and is not expected to produce toxic effects.

48 h EC50 : Daphnia magna (Water flea) > 232 mg/l

4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol

96 h LC50 : Oncorhynchus mykiss (rainbow trout) < 1 mg/l

72 h ErC50 : Algae > 0.808 mg/l

72 h EbC50 : Algae 0.156 mg/l

48 h EC50 : Daphnia 3.2 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

EINECS Status : On the inventory, or in compliance with the inventory
 TSCA Status : In compliance with TSCA Inventory requirements for commercial purposes.
 AICS Status : On the inventory, or in compliance with the inventory

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- DSL Status : On the inventory, or in compliance with the inventory
- ENCS (JP) Status : On the inventory, or in compliance with the inventory
- KECI (KR) Status : On the inventory, or in compliance with the inventory
- INV (CN) Status : On the inventory, or in compliance with the inventory

- SARA 313 Regulated Chemical(s) : 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.

- California Prop. 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
 1,4-Dioxane

 WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
 Ethylene oxide

- PA Right to Know Regulated Chemical(s) : 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.

- NJ Right to Know Regulated Chemical(s) : 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.

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.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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