

Viton® fluoroelastomer

Version 2.4

Revision Date 09/16/2010

Ref. 150000002433

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-9241, VTR-9242, VTR-9247, VTR-9258, VTX-9290, VTX-9298, VTX-9299, VTR-7622
MSDS Number : 150000002433
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. 1-703-527-3887)

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

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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

Polyvinylidene fluoride/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

Component	CAS-No.	Concentration
Polyvinylidene fluoride/hexafluoropropene	9011-17-0	>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	<2 %

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Barium sulfate	7727-43-7	<1 %
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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 noxious and toxic fumes.
- Suitable 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.

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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 of the SDS.

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.

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Personal protective equipment

- Respiratory protection** : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.
- Hand protection** : Material: Nitrile rubber
 Glove thickness: 0.38 mm
 Wearing time: 8 h
 Additional protection: Skin should be washed after contact.
- 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.

Exposure Guidelines**Exposure Limit Values****Hydrogen fluoride (anhydrous)**

PEL:	(OSHA)	2.5 mg/m ³	8 hr. TWA as F
PEL:	(OSHA)	3 ppm	TWA
TLV	(ACGIH)	0.5 ppm	TWA as F
TLV	(ACGIH)	2 ppm	TLV-C as F

Skin designation

Barium sulfate

PEL:	(OSHA)	5 mg/m ³	8 hr. TWA	Respirable fraction.
PEL:	(OSHA)	0.5 mg/m ³	8 hr. TWA as Ba	
PEL:	(OSHA)	15 mg/m ³	8 hr. TWA	Total dust.
TLV	(ACGIH)	10 mg/m ³	TWA	
AEL *	(DUPONT)	10 mg/m ³	8 & 12 hr. TWA	Total dust

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: sheets, pellets
Color	: white, off-white
Odor	: none
Density	: 1.75 - 1.90 g/cm ³
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. Hazardous decomposition products may be produced when the recommended processing temperatures or times are exceeded.
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.

SECTION 11. TOXICOLOGICAL INFORMATION

Polyvinylidene fluoride/hexafluoropropene

Dermal	: No adverse effects expected.
Oral ALD	: > 5,000 mg/kg , rat
Skin irritation	: non-irritant
Skin sensitization	: Not a skin sensitizer.

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Repeated dose toxicity : Inhalation
No adverse effects expected.

Oral
No adverse effects expected.

Carcinogenicity : No adverse effects expected.

Mutagenicity : No adverse effects expected.

Reproductive toxicity : No adverse effects expected.

Teratogenicity : No adverse effects expected.

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

Oral ALD : 3,400 mg/kg , rat

Skin irritation : irritant

Skin sensitization : guinea pig
Animal test did not cause sensitization by skin contact.

Repeated dose toxicity : Dermal
No toxicologically significant effects were found.

Oral - gavage
rat, male
Reduced body weight gain, Organ weight changes, Hypoactivity

Mutagenicity : Did not cause genetic damage in cultured bacterial cells.
Tests on mammalian cell cultures showed mutagenic effects.

Reproductive toxicity : 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 : rabbit
non-irritant

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Eye irritation	:	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	:	human non-irritant
Skin sensitization	:	Patch test on human volunteers did not demonstrate sensitization properties., human
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.
48 h EC50	: Daphnia magna (Water flea) > 205 mg/l
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	
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.

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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
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
PICCS (PH) 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 to the State of California to cause birth defects or other reproductive harm. Ethylene oxide

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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.

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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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