

KALREZ[®] perfluoroelastomer semi-finished parts and shapes

Version 2.0

Revision Date 02/12/2009

Ref. 150000002581

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	:	KALREZ [®] perfluoroelastomer semi-finished parts and shapes
Product Grade/Type	:	1045, 2037, 2037UP, 4001, 4001UP, 4120, 6221, 6380, 6880, 8085, 8085UP, 8101, 8101UP, 8201, 8201UP 8375, 8375UP, 8385, 8385UP, 8475, 8475UP, 8575, 8575UP, 9100, 9100UP,
MSDS Number	:	150000002581
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
Potential Health Effects
Skin

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

: Prolonged contact may cause: Mild skin irritation

Magnesium oxide : May irritate skin.

Eyes

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

: Particulate matter may cause: mechanical irritation with tearing, pain or visual impairment

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

Titanium dioxide : mechanical irritation with tearing, pain or visual impairment

Magnesium oxide : May irritate eyes.

Inhalation

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

: Dust may cause: Respiratory irritation, The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco., Repeated episodes of polymer fume fever may result in persistent lung effects..

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- Titanium dioxide : May cause nose, throat, and lung irritation.
- Repeated exposure
- Barium sulfate : lung effects
- Quartz : DuPont has classified this material as a probable human carcinogen.
- Target Organs
- Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene) : Lungs Cardio-vascular system
- Barium sulfate : Lungs

Carcinogenicity Material	IARC	NTP	OSHA
Titanium dioxide	2B		
Quartz	1	X	
Quartz			: DuPont has classified this material as a probable human carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
PERFLUOROELASTOMER		70 - 100 %
Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)	26655-00-5	0 - 20 %
Barium sulfate	7727-43-7	0 - 20 %
Fumed Silica	69012-64-2	0 - 10 %
Titanium dioxide	13463-67-7	0 - 20 %
Polytetrafluoroethylene	9002-84-0	0 - 10 %
Magnesium oxide	1309-48-4	0 - 5 %
Quartz	14808-60-7	0 - 15 %

SECTION 4. FIRST AID MEASURES

Skin contact : Wash off with soap and water.



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- Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.
- Inhalation : If breathed in, move person into fresh air. 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.

SECTION 5. FIRE-FIGHTING MEASURES

- Fire and Explosion Hazard : Burning produces obnoxious 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 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) : Refer to protective measures listed in sections 7 and 8.
- Spill Cleanup : Shovel into suitable container for disposal.

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.

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Storage : Keep in a dry, cool and well-ventilated place.

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 : If the product is used at temperatures above 400°C the surface may contain hydrogen fluoride condensate which may cause severe burns. In this case wear neoprene gloves.
- 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.

Exposure Guidelines

Exposure Limit Values

Hydrogen fluoride, anhydrous

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

Titanium dioxide

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 *	(DUPONT)	5 mg/m ³	8 & 12 hr. TWA	Respirable dust.

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

AEL *	(DUPONT)	10 mg/m ³	8 & 12 hr. TWA	Total dust.
AEL *	(DUPONT)	5 mg/m ³	8 & 12 hr. TWA	Respirable dust.

Quartz

PEL	(OSHA)	0.1 mg/m ³	8 hr. TWA	Respirable dust.
PEL	(OSHA)	15 mg/m ³	8 hr. TWA	Total dust.
PEL	(OSHA)	5 mg/m ³	8 hr. TWA	Respirable fraction.
TLV	(ACGIH)	0.05 mg/m ³	8 hr. TWA	Respirable fraction.
AEL *	(DUPONT)	0.1 mg/m ³	8 hr. TWA	Respirable dust.
AEL *	(DUPONT)	0.05 mg/m ³	12 hr. TWA	

Barium sulfate

PEL	(OSHA)	15 mg/m ³	8 hr. TWA	Total dust.
PEL	(OSHA)	0.5 mg/m ³	8 hr. TWA as Ba	
PEL	(OSHA)	5 mg/m ³	8 hr. TWA	Respirable fraction.



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TLV	(ACGIH)	10 mg/m3	TWA	
AEL *	(DUPONT)	10 mg/m3	8 & 12 hr. TWA	Total dust
Polytetrafluoroethylene				
AEL *	(DUPONT)	10 mg/m3	8 hr. TWA	Total dust.
AEL *	(DUPONT)	5 mg/m3	8 hr. TWA	Respirable dust.
Fumed Silica				
PEL	(OSHA)	20 millions of particles per cubic foot of air		TWA
PEL	(OSHA)	0.8 mg/m3	TWA	
		Remarks	The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.	
AEL *	(DUPONT)	1 mg/m3	8 & 12 hr. TWA	Respirable dust.
Magnesium oxide				
PEL	(OSHA)	15 mg/m3	8 hr. TWA	Total particulate.
TLV	(ACGIH)	10 mg/m3	8 hr. TWA	Inhalable fraction.

* 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Solid parts & shapes
Color	: white, off-white
Odor	: none
Water solubility	: insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: Temperature > 400 °C (> 752 °F) Avoid heating for prolonged periods above the recommended upper processing limit.
Incompatibility	: Alkali metals Alkaline earth metals
Hazardous decomposition products	: Hazardous decomposition products Hydrogen fluoride, Carbonyl fluoride, Fluorinated hydrocarbons

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SECTION 11. TOXICOLOGICAL INFORMATION

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

Oral LD50 : > 11,000 mg/kg, rat

Inhalation : lung effects

Skin irritation : Species: rabbit
non-irritant

Eye irritation : non-irritant

Repeated dose toxicity : Oral - feed, rat
No toxicologically significant effects were found.

Further information : The substance is a polymer and is not expected to produce toxic effects.

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

Fumed Silica

Dermal ALD : > 5,000 mg/kg, rabbit
The toxicological data has been taken from products of similar composition.Oral LD50 : > 5,000 mg/kg, rat OECD Test Guideline 401
The toxicological data has been taken from products of similar composition.Inhalation 4 h ALC : > 2.08 mg/l, rat
The toxicological data has been taken from products of similar composition.Skin irritation : Species: rabbit, No skin irritation OECD Test Guideline 404
The toxicological data has been taken from products of similar composition.

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Eye irritation	:	Species: rabbit, Mild eye irritation OECD Test Guideline 405 The toxicological data has been taken from products of similar composition.
Repeated dose toxicity	:	Inhalation, rat The toxicological data has been taken from products of similar composition., lung effects
Carcinogenicity	:	Animal testing did not show any carcinogenic effects., Information given is based on data obtained from similar substances.
Mutagenicity	:	Information given is based on data obtained from similar substances., Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	Animal testing did not show any effects on fertility., The toxicological data has been taken from products of similar composition.
Teratogenicity	:	Animal testing showed no developmental toxicity., Information given is based on data obtained from similar substances.
Titanium dioxide		
Dermal ALD	:	> 10,000 mg/kg, rabbit
Oral ALD	:	> 24,000 mg/kg, rat
Inhalation 4 h ALC	:	> 6.82 mg/l, rat
Skin irritation	:	non-irritant
Eye irritation	:	non-irritant
Carcinogenicity	:	An increased incidence of tumours was observed in laboratory animals., Based upon all available study results, DuPont scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.
Polytetrafluoroethylene		
Dermal	:	Due to its physical properties, there is no potential for adverse effects.
Oral LD50	:	> 11,280 mg/kg, rat
Inhalation	:	rat

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Lung irritation

Skin irritation	:	Species: human non-irritant
Eye irritation	:	Species: animals (unspecified species) The substance is a polymer and is not expected to produce toxic effects.
Repeated dose toxicity	:	Oral - feed, rat No toxicologically significant effects were found.
Carcinogenicity	:	Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Evidence suggests this substance does not cause genetic damage in animals.
Reproductive toxicity	:	Evidence suggests the substance is not a reproductive toxin in animals.
Teratogenicity	:	Evidence suggests the substance is not a developmental toxin in animals.
Magnesium oxide		
Skin irritation	:	Mild skin irritation
Eye irritation	:	irritant
Quartz		
Oral ALD	:	> 11,000 mg/kg, rat
Repeated dose toxicity	:	Inhalation Fluid retention in lungs (pulmonary oedema), lung effects
Carcinogenicity	:	An increased incidence of tumours was observed in laboratory animals.

SECTION 12. ECOLOGICAL INFORMATION
Aquatic Toxicity

Poly(Heptafluoropropyl Trifluorovinyl Ether/Tetrafluoroethylene)

: The substance is a polymer and is not expected to produce toxic effects.

Fumed Silica

96 h LC0

: Brachydanio rerio (zebra fish) > 10,000 mg/l OECD Test Guideline

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The toxicological data has been taken from products of similar composition.

72 h NOEC : Desmodesmus subspicatus (green algae) 10,000 mg/l
 The toxicological data has been taken from products of similar composition.

24 h EC50 : Daphnia magna (Water flea) > 10,000 mg/l OECD Test Guideline 202
 The toxicological data has been taken from products of similar composition.

Polytetrafluoroethylene : Aquatic toxicity is unlikely due to low solubility.

Additional ecological information : This product has no known eco-toxicological effects.

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.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

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 cancer.
 Quartz

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): Fumed Silica, Polytetrafluoroethylene, Barium sulfate, Titanium dioxide, Quartz, Magnesium oxide



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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): Fumed Silica, Barium sulfate, Titanium dioxide, Quartz, Magnesium oxide

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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OFFENDING COMMAND:

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