



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

"KALREZ" 4079 PERFLUOROELASTOMER PARTS
KRZ013 Revised 14-MAY-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"KALREZ" is a registered trademark of DuPont Dow Elastomers L. L. C..

Tradenames and Synonyms

"KALREZ" 4079

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Dow Elastomers L. L. C.
Bellevue Park Corporate Center
300 Bellevue Parkway
Wilmington, Delaware 19809

PHONE NUMBERS

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

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Table with 3 columns: Material, CAS Number, %
Material: PERFLUOROELASTOMER, CAS Number: >75
Material: ACCELERATORS AND CURATIVES REACTED WITH ABOVE TO FORM CURED ELASTOMER, CAS Number: <6
Material: CARBON BLACK, CAS Number: 1333-86-4, %: <20
Material: HEATED ABOVE 400 DEG C (752 DEG F) CAN EVOLVE AS DEGRADATION PRODUCT: Hydrogen fluoride, CAS Number: 7664-39-3, %: <1

HAZARDS IDENTIFICATION

Potential Health Effects

ADDITIONAL HEALTH EFFECTS

PERFLUOROELASTOMER

No data available for cured perfluoroelastomer.

## (HAZARDS IDENTIFICATION - Continued)

**INHALATION** Inhalation of fumes from overheating or burning "KALREZ", or from smoking tobacco or cigarettes contaminated with polymer may cause polymer fume fever, a flu-like illness with chills and fever. Symptoms may not occur for several hours after exposure, and go away in 24-48 hours even in absence of treatment.

Inhalation of low concentrations of hydrogen fluoride can initially include symptoms of choking, coughing, and severe eye, nose and throat irritation. Possibly followed after a symptomless period of 1 to 2 days by fever, chills, difficulty in breathing, cyanosis, and pulmonary edema. Acute or chronic overexposure to HF can injure the liver and kidneys. Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures to hydrogen fluoride.

**CARBON BLACK**

Immediate effects of overexposure to Carbon Black by inhalation may include irritation of the nose, throat, and lungs with cough, difficulty breathing or shortness of breath.

If particles from Carbon Black contact the eye, mechanical irritation with tearing, pain or blurred vision may result.

Significant skin permeation, and systemic toxicity, after contact with Carbon Black appears unlikely. There are no reports of human sensitization.

Epidemiologic studies demonstrate no significant risk of human cancer from exposure to Carbon Black. While some reports cite an increased incidence of pulmonary abnormalities, such as decreased pulmonary function and radiological changes among Carbon Black workers, other reports show no correlation between exposure and effects on pulmonary function or disease.

Increased susceptibility to the effects of Carbon Black may be observed in persons with pre-existing disease of the lungs.

**Carcinogenicity Information**

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material  
CARBON BLACK

IARC NTP OSHA ACGIH  
2B

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FIRST AID MEASURES  
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## First Aid

## INHALATION

No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary.

If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

## SKIN CONTACT

The compound is not likely to be hazardous by skin contact but cleansing the skin after use is advisable.

## EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

## INGESTION

Not a probable route. However, in case of accidental ingestion, call a physician.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Flash Point : Does not flash  
Method : Open cup

## Fire and Explosion Hazards:

Hazardous gases/vapors produced in fire are hydrogen fluoride (HF), carbonyl fluoride, carbon monoxide, low molecular weight fluorocarbons.

## Extinguishing Media

Water, Foam, Dry Chemical, CO2.

## Fire Fighting Instructions

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

A fire could form hydrogen fluoride fumes which react with water to form hydrofluoric acid. Wear neoprene gloves when handling refuse from a fire involving these types.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

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

## Spill Clean Up

Shovel or sweep up.

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HANDLING AND STORAGE  
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## Handling (Personnel)

See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

## Storage

Keep container closed to prevent contamination.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Avoid contamination of cigarettes or tobacco with perfluoroelastomer dust.

## Personal Protective Equipment

## EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material.

## RESPIRATORS

When temperatures exceed 400 degrees C and ventilation is inadequate to maintain concentrations below exposure limits, use a positive pressure air supplied respirator. Air purifying respirators may not provide adequate protection.

During grinding, sanding, or sawing operations use a NIOSH/MSHA approved air purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

## PROTECTIVE CLOTHING

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

## # Exposure Guidelines

## Exposure Limits

"KALREZ" 4079 PERFLUOROELASTOMER PARTS

PEL (OSHA) : Particulates (Not Otherwise Regulated)  
15 mg/m<sup>3</sup>, 8 Hr. TWA, total dust  
5 mg/m<sup>3</sup>, 8 Hr. TWA, respirable dust

## Other Applicable Exposure Limits

CARBON BLACK

PEL (OSHA) : 3.5 mg/m<sup>3</sup>, 8 Hr. TWA  
TLV (ACGIH) : 3.5 mg/m<sup>3</sup>, 8 Hr. TWA, A4  
AEL \* (DuPont) : 0.5 mg/m<sup>3</sup>, 8 & 12 Hr. TWA, (Polynuclear  
Aromatic Hydrocarbon Content <0.1%)  
Includes Channel, Lamp, and Thermal  
Black

Hydrogen fluoride

PEL (OSHA) : 3 ppm, 8 Hr. TWA, as F  
TLV (ACGIH) : 3 ppm, 2.6 mg/m<sup>3</sup>, Ceiling as F  
Notice of Intended Changes (2004)  
0.5 ppm, 8 Hr. TWA, as F  
Ceiling 2 ppm, as F  
AEL \* (DuPont) : 3 ppm, 15 minute TWA

\* 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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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Melting Point : NA  
% Volatiles : NA  
Solubility in Water : Insoluble  
Odor : None  
Form : Slab or fabricated parts  
Color : Black  
Specific Gravity : 2

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STABILITY AND REACTIVITY  
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## Chemical Stability

Stable at normal temperatures and storage conditions.

## Incompatibility with Other Materials

Incompatible or can react with molten alkali metals, interhalogen compounds.

## (STABILITY AND REACTIVITY - Continued)

## Decomposition

HAZARDOUS DECOMPOSITION PRODUCTS Above 204 C (399 F) small amounts of carbon monoxide and carbon dioxide. Above 400 C (752 F) small amounts of hydrogen fluoride and perfluoroolefins. Particulate matter evolved from overheating may cause polymer fume fever.

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TOXICOLOGICAL INFORMATION  
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## Animal Data

## CARBON BLACK

Oral ALD, rat: > 25,100 mg/kg

Repeated inhalation exposure of animals to Carbon Black caused inflammation of the respiratory tract, lungs and emphysema.

Repeated exposure to high doses of Carbon Black by ingestion or skin contact caused no significant toxicological effects.

No adequate studies have been conducted in animals to define the carcinogenicity of Carbon Black by ingestion. In several skin painting studies using various Carbon Blacks no carcinogenicity was observed. Tests by inhalation for carcinogenicity in rats show significant increases in lung tumors in female rats but not male rats. In another study using female mice exposed by inhalation to Carbon Black there was no increase in the incidence of respiratory tract tumors. Researchers conducting the rat inhalation studies believe that these effects probably result from the massive accumulation of small dust particles in the lung which overwhelm the normal lung clearance mechanisms. This represents "lung overload" phenomenon, rather than a specific chemical effect of the dust particle in the lung.

Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures. Tests in animals for genetic toxicity have produced mostly negative results. No animal data are available to define developmental or reproductive toxicity.

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ECOLOGICAL INFORMATION  
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## Ecotoxicological Information

## AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water.

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Preferred options for disposal are (1) recycling and (2) landfill. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/ provincial, and local regulations.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT  
Proper Shipping Name : Not regulated

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REGULATORY INFORMATION  
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## U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

## State Regulations (U.S.)

## STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- Carbon black.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- None known.

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)- Carbon black.

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OTHER INFORMATION  
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## Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont Dow Elastomers Medical Application Policy (H-69237).

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS