

**SECTION 3: HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

Shipped friction materials are not considered hazardous, but operations (overheating, burning, machining, abrading, or riveting) that can create airborne dust should be avoided. Such operations could cause exposures in excess of permissible exposure limits for the respective ingredient and should be considered hazardous.

**POTENTIAL HEALTH EFFECTS**

**Inhalation:** Dust may cause irritation. Fume produced at high temperatures may cause metal fume fever, a 24-to 48-hour "flu-like" illness. Repeated inhalation of dust over time may affect a variety of organs (See Chronic Section below).

**Skin:** May cause irritation. Prolonged skin contact may cause skin sensitization and/or dermatitis.

**Eye:** Dust may cause irritation and redness. Particles may scratch the eye.

**Ingestion:** Ingestion may cause irritation, nausea, vomiting, and diarrhea.

**Chronic:** Repeated inhalation of dust over time may cause fibrotic lung disease and increased risk of sinus and respiratory cancer. Long-term dust inhalation may also harm the nervous, gastrointestinal, renal (kidneys), and hematological (blood) systems.

**Carcinogenicity:**

COMPONENT	NTP	IARC	OSHA
Silica (Crystalline)	Yes	1	Yes
Antimony trioxide, Carbon Black, Ceramic Fibers, Mineral Fibers (respirable)	No	2B	No
Chromite	No*	3	No
Di (2-ethylhexyl) phthalate	Yes	3	No
Mineral Wool/Fiber**	Yes	3**	No
Acrylic Fiber, Aramid Fiber, Antimony sulfide	No	3	No
Titanium dioxide	No	3	No
Talc	No	3	No
Lead	Yes	No	No
Acrylic Fibers, Aluminum oxide, Barium sulfate, Brass, Butyl Rubber, Calcium carbonate, Calcium fluoride, Cashew Resin-Cured, Cellulose, Chlorobutyl Rubber, Coal, Coke, Copper, Fillite, Graphite, Hydrated Lime, Iron Powder, Iron oxide, Iron pyrite, Kyanite, Magnesium oxide, Mica, Molybdenum sulfide, Mullite, Nitrile Rubber, Phenolic Resin-cured, Potassium titanate, Rubber (Powdered), Silicon carbide, SBR Rubber, Sodium hexametaphosphate, Steel Fiber, Sulfur, Vermiculite, Wollastonite, Zinc, Zinc sulfide, Zinc oxide, Zirconium oxide, Zirconium silicate	No	No	No

\* Although not explicitly listed, chromite ore causes sarcomas.

\*\* The mineral fiber used has been classified as bio-soluble and exonerated under ECC directive 97/69/EC Note Q. The IARC has recently changed the classification of Mineral Fibers to Group 3 "unclassifiable" from Group 2 "possible carcinogen."

**Signs and Symptoms:** Skin may become red and itchy with repeated contact. Metal fume fever is characterized by chills, fever, muscle aches, and metallic taste. Anemia may cause dizziness and fatigue. Muscle weakness, fatigue, irritability, poor memory, and headache may indicate neurological effects. Gastrointestinal effects may result in nausea, abdominal pain, diarrhea, constipation, nausea and vomiting.

**Medical Conditions Aggravated by Exposure:** Overexposure may aggravate pre-existing skin, respiratory, kidney, blood, gastrointestinal and nervous system disorders.

**Target Organs:** Skin, eyes, lungs, gastrointestinal system.