

# Material Safety Data Sheet

(Complies with 29 CFR 1910.1200)

<b>Section I</b>			
Manufacturer	Carlisle Brake & Friction 6180 Cochran Road Solon, Ohio 44139		
Emergency Phone.	440-528-4000	Effective Date	October 23, 2009
Chemical Name	Friction Material	Revision Date	1-5-2015
Tradename	Sintered Friction Material		
Category	Inorganic—7383-5		

<b>Section II - Hazardous Ingredients / Identity</b>				
Component	OSHA-PEL (mg/m <sup>3</sup> )	ACGIH-TLV (mg/m <sup>3</sup> )	%	CAS No.
Zircon	5.0	5.0	Proprietary	14940-68-2
Iron	Total=15.0 Resp.= 5.0	10.0	Proprietary	7439-89-6
Carbon	Total=15.0 Resp.= 5.0	10.0	Proprietary	7782-42-5
Nickel Alloy	Total= 1.0	1.0	Proprietary	7440-02-0
Copper	1.0	1.0	Proprietary	7440-50-8
Tin	2.0	2.0	Proprietary	7440-31-5
Aluminum Oxide	Total=15.0 Resp.= 5.0	10.0	Proprietary	1344-28-1
Calcium Fluoride		2.5	Proprietary	7789-75-5
Zinc	Total=15.0 Resp.= 5.0	10.0	Proprietary	7440-66-6
Mullite/Glass	Resp.=5.0	10.0	Proprietary	7782-42-5

<b>Section III - Physical Characteristics</b>			
Boiling Point	N/A	Sp.Gr. (H <sub>2</sub> O=1)	
Vapor Press (mm Hg)	N/A	Solubility in Water	Insoluble
Reactivity in Water	N/A	Vapor Density (Air=1)	N/A
Melting Point		Color	Red/Black
Appearance/Odor	No Odor		

<b>Section IV - Fire and Explosion Data</b>			
Flashpoint	N/A	Method used	N/A
Flammable Limits (LEL/UEL)	N/A	Special Fire Fighting Procedure	None
Auto Ignition Temperature	N/A	Extinguishing Media	None
Unusual Fire and Explosion Hazards	None Know		

<b>Section V - Reactivity Data</b>	
Stability	Stable
Incompatibility ( Materials to Avoid)	None
Hazardous Decomposition Products	
Hazardous Polymerization	Will Not Occur
Conditions to Avoid	None

## Section VI - Health Hazards

### Effects of Overexposure:

- Inhalation:
- a) Iron inhalation can cause slight upper respiratory irritation, coughing, and a metal taste in mouth.
  - b) Chronic exposure to carbon as graphite dust can cause fibrosis, emphysema, and corpulmonale.
  - c) Inhalation of high conc. of copper dust may cause intense sneezing, nausea, weakness and fever, hemolysis of red blood cell's, deposition of hemofuscin in the liver and possible injury to lung cells.**
  - d) Nickel is a suspected carcinogen in animals. Inhalation may cause bronchitis.
  - e) Tin can cause neuralgic disturbances including tremors and flaccid paralysis. Exposure to dust and fumes of tin oxide causes a mild pneumoconiosis.
  - f) Zircon sands contain trace quantities (106- 20 pCi/g) of natural occurring radioactive Uranium & Thorium. Overexposure to respirable dust may cause lung cancer.**

### Emergency Procedures

Eye Contact: Flush with clean water for 15 minutes. If irritation persists, contact a physician.

Skin Contact: Wash thoroughly with soap and water.

Inhalation: Following exposure to a large amount of dust, remove from exposure. If breathing has stopped, perform artificial respiration. Contact a physician.

Ingestion: Get medical attention.

## Section VII - Spill/Leak Procedures

Handling, Storage	None applicable
DOT Shipping Rules	Non-hazardous as "article", no special precautions
Spill/Leak	N/A
Waste Disposal Methods	Check with local counsel for applicable laws/regulations

## Section VIII - Special Protection /Control Measures

Respiratory Protection/Ventilation	Use a NIOSH approved respirator with appropriate filters when exposed to brake wear products. Use exhaust ventilation to keep exposure below exposure limits.
Protective Gloves	Wear gloves to avoid skin contact.
Eye Protection	Wear safety glasses or goggles.
Other Protective Equipment	N/A

## Section IX - Special Precautions

No special precautions necessary

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