

# Material Safety Data Sheet

(Complies with 29 CFR 1910.1200)

<b>Section I</b>			
Manufacturer	Carlisle Brake and Friction 6180 Cochran Road Solon, Ohio 44139		
Emergency Phone.	216-267-7787	Effective Date	December 8, 2006
Chemical Name	Friction Material	Revision Date	10-25-12
Tradename	Sintered Friction Material		
Category	Inorganic—7362-2		

<b>Section II - Hazardous Ingredients / Identity</b>				
Component	OSHA-PEL (mg/m <sup>3</sup> )	ACGIH-TLV (mg/m <sup>3</sup> )	%	CAS No.
Copper	1.0	1.0	Proprietary	7440-50-8
Zirconium Oxide	5.0	5.0	Proprietary	14940-68-2
Tin	2.0	2.0	Proprietary	7440-31-5
Solid Lubricant			Proprietary	
Carbon	Total=15.0 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)	5.0
Vapor Press (mm Hg)	N/A	Solubility in Water	Insoluble
Reactivity in Water	N/A	Vapor Density (Air=1)	N/A
Melting Point	> 1650° F	Color	Copper color
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	CO <sub>2</sub> , foam, dry chemical, water
Unusual Fire and Explosion Hazards	None		

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

## Section VI - Health Hazards

### Effects of Overexposure:

- Inhalation: a) Inhalation of high concentrations of copper dust may cause intense sneezing, nausea, weakness and fever. Can cause hemolysis of red blood cells, deposition of hemofuscin in the liver and possible injury to lung cells.  
b) Chronic exposure to carbon as graphite dust can cause fibrosis, emphysema and corpulmonale.  
c) Tin can cause neurologic disturbances including tremors and flaccid paralysis. Exposure to dust and fumes of tin oxide causes a mild pneumoconiosis.  
d) Zircon sands contain trace quantities (106-20 pCi/g) of natural occurring radioactive Uranium & Thorium. Overexposure to respirable dust may cause lung cancer.

Skin: Repeated exposure to copper (as salts) may cause dermatitis.

Eye: Copper may cause conjunctivitis or ulceration and turbidity of the cornea.

### Emergency Procedures

Eye Contact: In case of contact, immediately flush with water for 15 minutes, including under the eyelids. Seek medical help immediately if material cannot be adequately removed from the eye.

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: Unlikely. If ingestion occurs, contact a physician.

## 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	Recommended, particularly if sensitive skin.
Eye Protection	Recommended
Other Protective Equipment	N/A

## Section IX - Special Precautions

No special precautions necessary

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