

# Material Safety Data Sheet

(Complies with 29 CFR 1910.1200)

<b>Section I</b>			
Manufacturer	Carlisle Brake & Friction 920 Lake Rd. Medina, Ohio 44256		
Emergency Phone .	330-725-4941	Effective Date	October 24, 1996
Chemical Name	Friction Material	Revision Date	June 9, 2015
Tradename	Sintered Friction Material		
Category	Inorganic--993-8		

<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
Tin	2.0	2.0	Proprietary	7440-31-5
Iron	Total=15.0 Resp.= 5.0	10.0	Proprietary	7439-89-6
Aluminum Oxide	Total=15.0 Resp.= 5.0	10.0	Proprietary	1344-28-1
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)	5.75
Vapor Press (mm Hg)	N/A	Solubility in Water	Insoluble
Reactivity in Water	N/A	Vapor Density (Air=1)	N/A
Melting Point	> 1600° 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	Nitrogen oxide if reacted with nitric acid.
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) Iron can cause coughing, slight upper respiratory irritation, and a metallic taste in the mouth.  
 e) Aluminum oxide exposure may cause coughing and shortness of breath.

Skin: Repeated exposure to copper (as salts) may cause dermatitis. Aluminum oxide may cause skin abrasions.

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: Under normal conditions of industrial use, ingestion is not expected to occur. Should ingestion occur, substantial lead exposure could result. (see inhalation). Molybdenum is considered a poison, causing severe GI irritation, diarrhea, coma and death from heart failure. **Do not induce vomiting.** Get medical attention.. If patient is conscious, give large quantities of water or milk..

## 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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