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MATERIAL SAFETY DATA SHEET

CONTACT NUMBERS:

CHEMTREC (24-hrs): (800) 424-9300

Section I: Product Information

Identity: **MANGANESE DIOXIDE**

Synonyms/ Trade Names: BRICKOX, GRANUSPECK, SLURRY GRADE BRICKOX, GLASSOX

Revision Date: 03/2007

Section II: Hazardous Ingredients

Chemical Name:	CAS #	OSHA PEL	ACGIH TLV	Percent
Manganese Compound (as Mn)	7439-96-5	5 mg/m^3 (C)	0.2 mg/m^3 (C)	45-55% Mn
Iron Oxide	1309-37-1	10 mg/m^3	5 mg/m^3 (TWA)	1-5% Fe_2O_3
Silica, Crystalline Quartz (respirable)	14808-60-7	(10 mg/m^3)/(%SiO_2+2)	0.05 mg/m^3 (TWA)	1-5% SiO_2
Aluminum Oxide (total)	1344-28-1	15 mg/m^3	10 mg/m^3 (TWA)	1-7% Al_2O_3
(respirable fraction)		5 mg/m^3	---	
Barium Oxide	1304-28-5	---	---	0.2-2% BaO

Section III: Physical Data

Boiling Point:	NA	**Specific Gravity (H_2O=1):**	5.0
Vapor Pressure (mm/Hg):	NA	**Melting Point:**	535° C
Vapor Density (Air=1):	NA	**Evaporation Rate (Butyl Acetate=1):**	NA
Solubility in Water:	insoluble		
Appearance and Odor:	black to brownish black, no odor		

Section IV: Fire and Explosion Hazard Data

Flash Point: Not combustible

Flammable Limits: **LEL** NA **UEL** NA

Extinguishing Media: Foam, CO_2, dry chemical or water.

Special Fire Fighting Procedures: In the event of fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Unusual Fire and Explosion Hazards: Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Increases the flammability of any combustible substance.

Section V: Reactivity Data

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: Do not heat or grind in the presence of easily oxidizable substances or organic matter.

Incompatibility (materials to avoid): Easily oxidizable substances, sulfur, sulfides, phosphides, hydrophosphides, chlorates, peroxides, aluminum powder, rubidium acetylide, potassium azide, chlorine trifluoride. Reacts with hydrochloric acid to form corrosive chlorine gas.

Hazardous Decomposition or Byproducts: Upon heating it decomposes to form manganese sesquioxide and oxygen which facilitates combustion.

Hazardous Polymerization: Will not occur.

Section VI: Health Hazard Data

Route of Entry: **INHALATION**: May irritate the respiratory tract. May increase the incidence of upper respiratory infections (pneumonia). Prolonged exposure to silica dust may result in silicosis, a fibrotic lung disease.

SKIN: May cause irritation.

INGESTION: May cause abdominal pain and nausea. Manganese dioxide

dust is poorly absorbed through the gut.

Health Hazards (Acute and Chronic):	Chronic exposure and inhalation of excessive manganese dust may cause disorders of the central nervous system.
Carcinogenicity:	NTP: Yes (Silica) IARC Monographs: Yes (Silica)
Signs and Symptoms of Exposure:	Early symptoms of manganese toxicity include sluggishness, sleepiness, and weakness in legs. Symptoms of silicosis include impaired pulmonary function a wheezing.
Aggravation of Pre-existing Conditions:	Persons with impaired respiratory function may be more susceptible to the effect of this substance.
Emergency and First Aid Procedures:	**IF INHALED**, remove to fresh air and seek medical attention for any breathing difficulty. **IN CASE OF SKIN CONTACT**, wash with soap & water. Seek medical attention if red & irritated. **IN CASE OF EYE CONTACT**, flush eyes immediately with water for at least 15 minutes. Seek medical attention if irritation persists. **IF INGESTED**, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call a physician immediately.

Section VII: Precautions for Safe Handling and Use

Material Release or Spill Precautions:	Should a spill occur, ventilate area. Clean-up personnel require respiratory protection. Recover uncontaminated material for use. Vacuum or sweep remaining material, keeping dust to a minimum. Isolate wet material from dry and store away from combustible materials.
Waste Disposal Method:	Dispose of unreclaimable material in a RCRA-approved waste facility.
Handling and Storing Precautions:	Manganese dioxide is classified as an oxidizer and should be stored in a dry place away from combusitlbes and sources of high heat. Protect containers from damage and keep closed when not in use.
Other Precautions:	Observe good personal hygiene. Wash after handling.

Section VIII: Control Measures

Respiratory Protection:	Use NIOSH approved particulate respirator if dust generation occurs or is anticipated. OSHA standard 1910.134 or ANSI Z88.2-1980 specifications are recommended.
Ventilation:	A system of local and/or general exhaust is recommended to keep employee exposures below the airborne exposure limits. Local exhaust is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.
Protective Gloves:	Yes
Eye Protection:	Safety goggles are recommended.
Other Protective Clothing or Equipment:	Use other protective equipment when necessary in order to avoid prolonged exposure to skin.
Work and Hygienic Practices:	Observe good personal hygiene. Wash after handling.

SARA Title III Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372.45:

Component	CAS #	% by Weight
Manganese Dioxide	1313-13-9	51-55% Mn
Barium Oxide	1304-28-5	0.1-1.8% Ba

This information must be included in all MSDS's that are copied and distributed for this material.