

Material Safety Data Sheet

SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: Birm

Part Number: multiple

Chemical Family: oxides

Manufacturer's Name: Siemens Industry, Inc. - Water Technologies Business Unit

Address: 4669 Shepherd Trail, Rockford, IL 61103

Product/Technical Information Phone Number: (815) 877-3041

Medical/Handling Emergency Phone Number: Call CHEMTREC at (800) 424-9300
24 hours a day

Transportation Emergency Phone Number: Call CHEMTREC at (800) 424-9300
24 hours a day

Issue Date: July 26, 2000

Revision Date/Revision Number: April 2011/ Rev 1

SECTION 2 – COMPOSITION INFORMATION

<u>Chemical Name</u>	<u>Percent by Weight</u>	<u>CAS#</u>
Manganese Dioxide	varies	1313-13-9
Silicon Oxide	varies	7631-86-9
Bonding Agent	varies	Proprietary

SECTION 3 – HAZARDS IDENTIFICATION

Appearance & Odor: Black granules with no odor.

Emergency Overview: Dust that contacts eyes may be irritating or cause mechanical injury. Dust may cause temporary skin irritation. Inhalation will cause nose, throat and lung irritation with coughing and wheezing. Ingestion may cause abdominal pain and nausea.

Fire & Explosion Hazards: This material can be a mild oxidizer.

Primary Route(s) of Exposure: Eye contact, skin contact, ingestion, or inhalation are all possible routes of entry.

Inhalation- Acute Effects: Inhalation will cause nose, throat and lung irritation with coughing and wheezing. May cause a flu-like illness (metal fume fever) characterized by chills, fever, aching muscles, dryness in the mouth and throat and headache.

Skin Contact-Acute Effects: Dust may cause temporary skin irritation.

Eye Contact- Acute Effects: Dust that contacts eyes may be irritating or cause mechanical injury.

Ingestion- Acute Effects: Ingestion may cause abdominal pain and nausea.

Material Safety Data Sheet

SECTION 4 – FIRST AID MEASURES

Inhalation First Aid: Remove affected person from area to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped and give CPR ONLY if there is no breathing and no pulse. Obtain medical attention.

Skin Contact First Aid: Immediately remove clothing from affected area and wash skin for 5 minutes with flowing water and soap. Clothing should be discarded or washed before reuse. Obtain medical assistance if irritation develops. DO NOT instruct person to neutralize affected skin area.

Eye Contact First Aid: Immediately irrigate eyes with flowing water continuously for 15 minutes while holding eyes open. Contacts should be removed before or during flushing. Seek medical assistance if irritation develops. DO NOT instruct person to neutralize.

Ingestion First Aid: If victim is alert and not convulsing rinse mouth with water and give plenty of water to drink. If spontaneous vomiting occurs, have affected person lean forward with head down to avoid breathing in of vomitus. Rinse mouth again and give more water to drink. Obtain medical attention.

Medical Conditions Aggravated: Respiratory ailments may be aggravated by exposure to this product.

Note to Physician: No specific antidote, treat patient symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point/Method: Non-Flammable.

Auto Ignition Temperature: Non-Flammable.

Upper/Lower Explosion Limits: Not applicable.

Extinguishing Media: Water or water based foam.

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

Fire & Explosion Hazards: This material can be a mild oxidizer.

Hazardous Products of Decomposition and /or Combustion: Toxic metal fumes may form when heated to decomposition.

NFPA Ratings:

HEALTH - 2 FLAMMABILITY – 0 REACTIVITY – 1 OTHER - Oxidizer

Material Safety Data Sheet

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Clean up spills in a manner that does not disperse dust into the air. Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure, and removal of material from eyes, skin, and clothing.

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State, Local and Provincial laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 7 – HANDLING AND STORAGE

Handling: Avoid dispersion into air. Keep containers dry and closed. Follow good handling and housekeeping practices to minimize spills, generation of airborne dusts, and accumulation of dusts on exposed surfaces. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones. Prevent or minimize exposures to dusts by using appropriate respirators, gloves, and eye protection. Wash exposed skin areas thoroughly with soap and water.

Storage: Store in ambient atmospheric conditions. Product should be stored in a closed, dry container away from incompatibles, combustibles, organic or other readily oxidizable materials.

General Comments: Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

SECTION 8 – PERSONAL PROTECTION/ EXPOSURE CONTROL

Respiratory Protection: Use NIOSH/MSHA approved respiratory protection equipment appropriate to the material and/or its concentration where airborne exposure is likely. If exposures cannot be kept to a minimum with engineering controls, consult manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer.

Skin Protection: Wear appropriate dust resistant gloves and clothing.

Eye Protection: Safety glasses with side shields are recommended for any type of handling. Where eye contact or dusty conditions may be likely, dust tight goggles are recommended.

Ventilation Protection: Provide ventilation if necessary to minimize exposure. Dilute ventilation acceptable, but local mechanical exhaust ventilation preferred, if practical, at sources of air contamination such as open process equipment.

Other Protection: Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Exposure Limits:

Manganese dioxide:

Birm

Material Safety Data Sheet

OSHA PEL-CEIL: 5 mg/m³ Ceiling for manganese compounds as manganese
ACGIH TLV-TWA: 0.2 mg/m³ for manganese, elemental and inorganic compounds as manganese
NIOSH REL-TWA: 1 mg/m³ (fume); STEL:3 mg/m³ (fume)

Bonding agent:

OSHA PEL-TWA: 5 mg/m³
ACGIH TLV-TWA: 5 mg/m³

Silicon oxide:

Exposure limits have not been developed.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Black granules with no odor.

Vapor Pressure: ND*

Vapor Density (Air=1): ND

Boiling Point: 3806°F

Melting Point: ND

Specific Gravity: 1.61

Solubility in Water: Insoluble

Volatile Percentage: ND

pH: ND

Flash Point/method: NA**

Auto Ignition Temperature: NA

Upper/Lower Explosion Limits: NA

*ND=Not determined

**NA=Not applicable

SECTION 10 – STABILITY AND REACTIVITY

Stability: This product is considered stable under the specified conditions of storage, shipment and use.

Incompatibilities: Easily oxidizable materials, sulfur, sulfides, phosphids, hypophosphites, chlorates, peroxides, aluminum powder, rubidium acetylide, potassium azide, chlorine trifluoride. May react with hydrochloric acid to form corrosive chlorine gas. Heating or rubbing this material with organic materials can cause a fire hazard.

Polymerization: Hazardous polymerization will not occur.

Decomposition: Toxic metal fumes may form when heated to decomposition.

Conditions to avoid: Heat, flames, ignition sources and incompatible materials.

SECTION 11 – TOXICOLOGICAL INFORMATION

INHALATION – Acute: Inhalation will cause nose, throat and lung irritation with coughing and wheezing. Inhalation of Manganese dioxide may cause a flu-like illness (metal fume fever) characterized by chills, fever, aching muscles, dryness in the mouth and throat and headache.

Material Safety Data Sheet

May increase the incidence of upper respiratory infections (pneumonia). Absorption of inorganic manganese salts through the lungs is poor but may occur in chronic poisoning.

INHALATION – Chronic: Repeated exposure to Manganese dioxide may cause bronchitis with cough, phlegm and/or shortness of breath. Permanent lung damage may occur with repeated and high exposure. Also see neurotoxic effects (below).

SKIN CONTACT – Acute: Dust may cause temporary skin irritation.

SKIN CONTACT – Chronic: There are no known chronic dermal effects.

EYE CONTACT – Acute: Dust that contacts eyes may be irritating or cause mechanical injury.

INGESTION – Acute: Ingestion may cause abdominal pain and nausea. The Manganese dioxide oral LD50 (rat) is >3478 mg/kg.

INGESTION – Chronic: Effects are similar to inhalation effects. Also see neurotoxic effects (below).

CARCINOGENICITY/MUTAGENICITY: There are no known carcinogenic/mutagenic effects.

REPRODUCTIVE EFFECTS: Manganese metal may damage the reproductive system and has shown teratogenic effects in laboratory animals.

NEUROTOXICITY: Repeated exposure to Manganese dioxide can cause permanent brain damage. Early symptoms include poor appetite, weakness and sleepiness. Later effects include changes in speech, balance, mood and personality, a loss of facial expression, poor muscle coordination, muscle cramps, twitching and tremors. This substance may have effects on the nervous system, resulting in neurologic and neuropsychiatric disorders (manganism).

OTHER EFFECTS: Manganese dioxide may cause kidney effects, liver damage and anemia.

TARGET ORGANS: Target organs include the skin, eyes, respiratory system, digestive system, brain, kidneys and liver.

SECTION 12 – ECOLOGICAL INFORMATION

There are no known ecological effects.

SECTION 13 – DISPOSAL CONSIDERATIONS

Material that cannot be used or chemically reprocessed and empty containers should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly emptied before disposal. Generators of waste material are required to evaluate all waste for compliance the RCRA and any local disposal procedures and regulations. NOTE: State and local regulations may be more stringent than federal regulations.

SECTION 14 – TRANSPORTATION INFORMATION

DOT Shipping Description: Not DOT regulated

Material Safety Data Sheet

SECTION 15 – REGULATORY INFORMATION

Applies to all components:

CERCLA SECTION 103 (40CFR302.4): no RQ: none

SARA SECTION 302 (40CFR355.30): no

SARA SECTION 304 (40CFR355.40): no

SARA SECTION 313 (40CFR372.65): no

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: yes CHRONIC: yes FIRE: no REACTIVE: no SUDDEN RELEASE: no

OSHA PROCESS SAFETY (29CFR1910.119): no

CALIFORNIA PROPOSITION 65: no

SECTION 16 – OTHER INFORMATION

Disclaimer: The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the user thereof. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial and local laws.

Revision Indicator: April 2011, Revised Section 1 (Updated manufacturer's name)