



**MATERIAL SAFETY DATA SHEET**  
COMPLIES WITH 29 CFR 1910.1200.  
OSHA HAZARD COMMUNICATION RULE

**DATE OF LAST REVISION: 3-4-07**

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## CHEMICAL IDENTITY

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LABEL IDENTITY  
CHEMICAL NAME/SYNONYMS

**MAGNESIUM OXIDE**  
**Magnesium Oxide, Natural Periclase, Magnesia, Calcined Magnesia, Magnesia Usta, Magcal, Maglite, Calcined Brucite, Calcined Magnesite**

FORMULA  
CHEMICAL FAMILY  
CALCULATED MOLECULAR WEIGHT  
CAS REGISTRY NUMBER  
HAZARDOUS INGREDIENTS

**MgO**  
**METAL OXIDE**  
**40.30**  
**1309-48-4, LISTED IN THE TSCA INVENTORY**  
**MAGNESIUM OXIDE**

%: **100**

TLV: **10mg/m3 (as Mg fume)**

TWA: **15mg/m3**

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## PHYSICAL AND CHEMICAL PROPERTIES

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COLOR, FORM AND ODOR

**Colorless to white, very fine powder and pieces, no odor.**

BOILING POINT

**3600**

DENSITY (gm/cc)

**No Data**

VAPOR PRESSURE @ 20°

**NA**

% VOLATILE BY VOLUME (%)

**NA**

REACTION WITH WATER

**None**

EVAPORATION RATE (H2O=1)

**NA**

SOLUBILITY IN WATER

**Soluble – Sets to cement-like hardness in water.**

MELTING POINT

**2500 C to 2832 C**

OTHER

**Takes up CO<sub>2</sub> & H<sub>2</sub>O in air. Soluble in dilute acids, insoluble in alcohol.**

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## FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT

**3600 C**

AUTOIGNITION TEMPERATURE (° C)

**NA**

FLAMMABILITY

**Non-flammable**

EXTINGUISHING MEDIA

**NA**

SPECIAL FIRE FIGHTING PROCEDURES

**Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.**

UNUSUAL FIRE & EXPLOSION HAZARDS

**Magnesium oxide takes up carbon dioxide and water from the air. Combines with water to form magnesium hydroxide. May have a violent reaction or ignition on contact with interhalogens. Incandescent reaction with phosphorus pentachloride.**



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### HEALTH HAZARD INFORMATION

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TOXICITY DATA                      itr-ham TDLO: **480mg/kg**                      ihl-hmn TCLO: **400mg/m3**

HMIS RATING:

HEALTH: **2**    FLAMMABILITY: **0**    REACTIVITY: **0**    PERSONAL PROTECTION: **E**

ROUTES OF ENTRY

INHALATION:            **Yes**  
SKIN:                    **No**  
INGESTION:            **Yes**  
EYES:                    **nO**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Pre-existing respiratory disorders.**

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **May cause cough, mucous production, shortness of breath, nausea, malaise, muscular weakness and paralysis, general depression, ataxia, lithargy, listlessness, poor tendon reflexes, hypotension, cutaneous vasodilation, increased sensitivity of the carotid sinus and cardiac arrest.**

DERMAL: **May cause redness and itching.**

EYE: **May cause redness, itching, burning and watering.**

INGESTION: **May cause gastrointestinal disturbances, skin lesions, nervous afflictions, growth retardation, perihepatic granulomas and fibrous peritonitis.**

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CARCINOGENICITY: **none**    NTP: **no**    IARC MONOGRAPHS: **no**    OSHA REGULATE: **no**

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EMERGENCY FIRST AID PROCEDURES:

**\*\*\*\*SEEK MEDICAL ATTENTION FOR ALL SITUATIONS MENTIONED BELOW\*\*\*\***

INGESTION: **Administer 1-2 glasses of milk/water and induce vomiting**

INHALATION: **Remove to fresh air, administer oxygen if breathing is difficult**

SKIN CONTACT: **Brush material off skin and wash affected area with soap and water**

EYE CONTACT: **Flush eyes for at least 15 minutes with lukewarm water**

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### REACTIVITY DATA

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STABILITY

**Stable**

CONDITIONS CONTRIBUTING TO UNSTABILITY  
INCOMPATIBILITY (MATERIALS TO AVOID)

**None**  
**Interhalogens, Phosphorus Pentachloride, Water, Moisture, Chlorine Trifluoride, Bromine Pentafluoride.**

HAZARDOUS DECOMPOSITION PRODUCTS  
HAZARDOUD POLYMERZATION  
CONDITIONS TO AVOID

**Magnesium Hydroxide**  
**Will Not Occur**  
**None**



## MAGNESIUM OXIDE MATERIAL SAFETY DATA SHEET

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### SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **wear a self-contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred and insure that proper ventilation is available. Vacuum up spill using a high efficiency unit and place in a closed container for proper disposal. Take care not raise dust.**

WASTE DISPOSAL METHOD:

**Dispose of in accordance with local, state and federal regulations.**

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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION	<b>Wear NIOSH-approved dust-mist-fume cartridge respirator</b>
LOCAL EXHAUST	<b>Maintain exposure below TLV</b>
MECHANICAL (general)	<b>Recommended</b>
SPECIAL	<b>Handle in controlled atmosphere</b>
OTHER	<b>NA</b>
PROTECTIVE GLOVES	<b>Neoprene</b>
EYE PROTECTION	<b>Safety glasses</b>
OTHER PROTECTIVE EQUIPMENT	<b>Wear protective clothing to prevent contamination of skin and clothes</b>

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### SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

**Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before eating.**

TRANSPORTATION REQUIREMENTS	DOT CLASS:	<b>Not Classified</b>
	UN NUMBER:	<b>NC</b>
	IMCO CLASS:	<b>NC</b>
	OTHER:	<b>ND</b>

PRECAUTIONARY LABELING **NONE**

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THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

**NA= NOT APPLICABLE**

**ND= NO DATA FOUND**



## OTHER EFFECTS OF OVEREXPOSURE:

The inhalation of fumes of freshly sublimed magnesium oxide may cause metal fume fever. There is no evidence that magnesium produces true systemic poisoning. Particles of metallic magnesium or magnesium alloy which perforate the skin or gain entry through cuts and scratches may produce a severe local lesion characterized by the evolution of gas and acute inflammatory reaction, frequently with necrosis. The condition has been called a "chemical gas gangrene." Gaseous blebs may develop within 24 hours of the injury. The inflammatory response is marked at the site of injury and there may be signs of lymphagitis. The lesion is very slow to heal.

The toxicity of magnesium compounds is usually that of the anion.

Inorganic fluorides are generally highly irritating and toxic. Acute effects resulting from exposure to fluorine compounds are due to hydrogen fluoride, chronic fluorine poisoning, or "fluorosis," occurs among miners of cryolite, and consists of a sclerosis of the bones, caused by fixation of the calcium by the fluorine. These may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, diarrhea, abdominal burning and cramp-like pains. Can cause severe bone changes, making normal movements painful. Some enzyme systems effects are reported. Also loss of weight, anorexia, anemia, wasting and cachexia, and dental defects are among the common findings in chronic fluorine poisoning. There may be an eosinophilia, and impairment of growth in young workers. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory and nervous complaints and skin rashes. Common air contaminants.