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\*\*MAGNESIUM OXIDE\*\*  
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MATERIAL SAFETY DATA SHEET  
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SUBSTANCE IDENTIFICATION  
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SUBSTANCE: \*\*MAGNESIUM OXIDE\*\*

CAS-NUMBER 1309-48-4

TRADE NAMES/SYNONYMS:

MAGNESIUM OXIDE (MGO); MAGNESIA; MAGNESIUM MONOXIDE; MAGLITE 4; ANSCOR-PE;  
CALCINED MAGNESIA; ELASTO MAG 20; ELASTO MAG 170SIA; MAGNESIA (MGO);  
M51; M3494; M300; MGO; ACC13450

CHEMICAL FAMILY:  
METAL OXIDE

MOLECULAR FORMULA: MG-O

MOLECULAR WEIGHT: 40.31

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=0  
NFPA RATINGS (SCALE 0-4): HEALTH=U FIRE=0 REACTIVITY=0

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COMPONENTS AND CONTAMINANTS  
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COMPONENT: MAGNESIUM OXIDE  
CAS# 1309-48-4

PERCENT: 100.0

EXPOSURE LIMITS:

MAGNESIUM OXIDE (FUME):  
10 MG/M3 OSHA TWA (TOTAL PARTICULATE)  
10 MG/M3 ACGIH TWA

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PHYSICAL DATA  
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DESCRIPTION: ODORLESS, FINE WHITE POWDER. BOILING POINT: 6512 F (3600 C)

MELTING POINT: 5160 F (2852 C) SPECIFIC GRAVITY: 3.58 @ 25 C

PH: 10.3 @ SATURATED SOL SOLUBILITY IN WATER: SLIGHTLY SOLUBLE

SOLVENT SOLUBILITY: SOLUBLE IN DILUTE ACIDS AND AMMONIUM SALT SOLUTIONS,  
INSOLUBLE IN ALCOHOL

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FIRE AND EXPLOSION DATA  
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FIRE AND EXPLOSION HAZARD:  
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR FOAM

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM

FIREFIGHTING:  
NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING  
VAPORS OR DUSTS; KEEP UPWIND.

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TOXICITY  
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MAGNESIUM OXIDE:  
TOXICITY DATA: 400 MG/M3 INHALATION-HUMAN TCL0; TUMORIGENIC DATA (RTECS).  
CARCINOGEN STATUS: NONE.  
ACUTE TOXICITY LEVEL: INSUFFICIENT DATA.  
TARGET EFFECTS: NO DATA AVAILABLE.  
AT INCREASED RISK FROM EXPOSURE: PERSONS WITH A HISTORY OF CHRONIC RESPIRATORY  
DISEASE.

*Chemistry*

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ADDITIONAL DATA: INTERACTIONS WITH MEDICATIONS HAVE BEEN REPORTED.

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HEALTH EFFECTS AND FIRST AID

INHALATION:

MAGNESIUM OXIDE:

ACUTE EXPOSURE- THE DUST MAY CAUSE RESPIRATORY TRACT IRRITATION. METAL FUME FEVER, AN INFLUENZA-LIKE ILLNESS, MAY OCCUR IF FRESHLY FORMED MAGNESIUM OXIDE FUMES COMPOSED OF PARTICLES SIZED BETWEEN 0.02-0.05 MICRONS ARE INHALED IN SUFFICIENT AMOUNTS. SYMPTOMS MAY BE DELAYED 4-12 HOURS AND BEGIN WITH A SUDDEN ONSET OF THIRST, AND A SWEET, METALLIC OR FOUL TASTE IN THE MOUTH. OTHER SYMPTOMS MAY INCLUDE UPPER RESPIRATORY TRACT IRRITATION ACCOMPANIED BY COUGHING AND A DRYNESS OF THE MUCOUS MEMBRANES, LASSITUDE AND A GENERALIZED FEELING OF MALAISE. FEVER, CHILLS, MUSCULAR PAIN, MILD TO SEVERE HEADACHE, NAUSEA, OCCASIONAL VOMITING, EXAGGERATED MENTAL ACTIVITY, PROFUSE SWEATING, EXCESSIVE URINATION, DIARRHEA, PROSTRATION AND LEUKOCYTOSIS MAY ALSO OCCUR. TOLERANCE TO FUMES DEVELOPS RAPIDLY, BUT IS QUICKLY LOST. ALL SYMPTOMS USUALLY SUBSIDE WITHIN 24-36 HOURS.

CHRONIC EXPOSURE- MAY CAUSE RESPIRATORY TRACT IRRITATION, NASAL CATARRH AND COUGHING UP OF DISCOLORED SPUTUM. THERE IS NO EVIDENCE OF LUNG INJURY FROM INHALATION OF MAGNESIUM DUST.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

MAGNESIUM OXIDE:

ACUTE EXPOSURE- NO DATA AVAILABLE.  
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

MAGNESIUM OXIDE:

ACUTE EXPOSURE- MAY CAUSE SLIGHT IRRITATION, REDNESS AND PAIN.  
CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

MAGNESIUM OXIDE:

ACUTE EXPOSURE- MAY CAUSE DIARRHEA. MAGNESIUM SALTS ARE GENERALLY SO SLOWLY ABSORBED THAT ORAL ADMINISTRATION CAUSES NOTHING MORE THAN PURGING. IF EVACUATION FAILS, MUCOSAL IRRITATION AND ABSORPTION MAY OCCUR. SYSTEMICALLY, MAGNESIUM MAY PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION, ABOLITION OF REFLEXES AND DEATH FROM RESPIRATORY PARALYSIS.  
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY. IF VOMITING OCCURS, KEEP HEAD LOWER THAN HIPS TO PREVENT ASPIRATION.

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

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REACTIVITY

REACTIVITY:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

MAGNESIUM OXIDE:

ABSORBS MOISTURE AND CARBON DIOXIDE FROM THE AIR.

INCOMPATIBILITIES:

MAGNESIUM OXIDE:

ACIDS (STRONG): VIOLENT REACTION.  
ALUMINUM POWDER: MAY IGNITE OR EXPLODE WHEN HEATED.  
BROMINE PENTAFLUORIDE: VIOLENT REACTION.  
CHLORINE TRIFLUORIDE: MAY IGNITE.  
INTERHALOGENS: INCOMPATIBLE.  
MAGNESIUM POWDER: MAY IGNITE OR EXPLODE WHEN HEATED.  
PHOSPHORUS PENTACHLORIDE: INCANDESCES BRILLIANTLY ON HEATING.  
SULFUR (SUBLIMED): MAY IGNITE OR EXPLODE WHEN HEATED.

DECOMPOSITION:

THERMAL DECOMPOSITION MAY RELEASE TOXIC AND/OR HAZARDOUS GASES.

POLYMERIZATION:

HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL

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TEMPERATURES AND PRESSURES.

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STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

\*\*STORAGE\*\*

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

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CONDITIONS TO AVOID

NONE REPORTED.

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SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:  
SWEEP UP AND PLACE IN SUITABLE CLEAN, DRY CONTAINERS FOR RECLAMATION OR LATER DISPOSAL. DO NOT FLUSH SPILLED MATERIAL INTO SEWER. KEEP UNNECESSARY PEOPLE AWAY.

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PROTECTIVE EQUIPMENT

VENTILATION:  
PROVIDE LOCAL EXHAUST VENTILATION SYSTEM TO MEET PUBLISHED EXPOSURE LIMITS.

RESPIRATOR:  
THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS; NIOSH CRITERIA DOCUMENTS OR BY THE U.S. DEPARTMENT OF LABOR, 29 CFR 1910 SUBPART Z.  
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

FOR MAGNESIUM OXIDE FUME:

100 MG/M3- ANY DUST, MIST AND FUME RESPIRATOR WITH A FULL FACEPIECE.  
ANY SUPPLIED-AIR RESPIRATOR.  
ANY SELF-CONTAINED BREATHING APPARATUS.

250 MG/M3- ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE.  
ANY POWERED AIR-PURIFYING RESPIRATOR WITH A DUST, MIST AND FUME FILTER.

500 MG/M3- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.  
ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.  
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE.  
ANY POWERED AIR-PURIFYING RESPIRATOR WITH A TIGHT-FITTING FACEPIECE AND A HIGH-EFFICIENCY PARTICULATE.

7500 MG/M3- ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE AND OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ESCAPE- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.  
ANY APPROPRIATE ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING:  
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:  
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:  
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY

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BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH  
FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC.  
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