

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Magnesium Oxide
CHEMICAL NAME: Magnesium Oxide
CHEMICAL FORMULA: MgO
SYNONYMS: Magnesia, Calcined Magnesia, Calcined Magnesite, Fused Magnesia
PRODUCT USE: Industrial Chemical Process/Animal Feed Supplement/Refractory Material

Distributed by Pestell Minerals & Ingredients

New Hamburg, ON Canada

24 Hour Emergency: Canutec: 663-996-6666

January 2010

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Components	%(wt./wt.)	CAS#	LD ₅₀ /species	LC ₅₀ /species	Exposure Limits		
					OSHA- PEL	ACGIH-TLV	Alberta-TWA
Magnesium Oxide	94 - 98	1309-48-4	Not Available	Not Available	15 mg/m ³ (Nuisance Particulate)	10 mg/m ³ (Nuisance Particulate)	10 mg/m ³ (Nuisance Particulate)
Calcium Oxide	1.5 – 4	1305-78-8	Not Available	Not Available	5 mg/m ³	2 mg/m ³	2 mg/m ³
Magnesium Oxide <u>Fume</u> *	Unknown	1309-48-4	Not Available	Not Available	15 mg/m ³ (Total Particulate)	10 mg/m ³ (Total Particulate)	10 mg/m ³ (Total Particulate)

* Magnesium Oxide Fume may be generated if product is heated to volatilization.

SECTION 3 – HAZARDS IDENTIFICATION

ROUTES OF ENTRY: Skin Contact Skin Absorption Eye Contact Inhalation Ingestion

EYES/SKIN: May cause irritation of eyes, skin or nasal passages.

INHALATION: May cause irritation of the upper respiratory passages. Inhalation of magnesium oxide fume may cause metal fume fever, however no evidence of metal fume fever resulting from industrial exposure to magnesium oxide fume has been found. Symptoms of metal fume fever include; cough, tightness of chest, sweating, headache, fever, muscle aches, nausea, vomiting and tiredness.

INGESTION: No significant effects are expected to occur.

EFFECTS OF ACUTE EXPOSURE:

See inhalation effects above.

EFFECTS OF CHRONIC EXPOSURE:

None Reported

SECTION 4 – FIRST AID MEASURES

INHALATION: If symptoms of exposure are experienced (see Hazards Identification), remove victim to fresh air. Obtain medical attention.

INGESTION: Rinse mouth with and/or drink water if conscious. Obtain medical attention.

SECTION 4 – FIRST AID MEASURES – CONT'D

- EYES:** If irritation occurs, immediately flush eyes with water for at least 10 minutes. Obtain medical attention.
- SKIN:** Not expected to cause a problem. However, if irritation occurs, flush affected area with water. If irritation Persists, obtain medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

CONDITIONS OF FLAMMABILITY:	Not Flammable
EXTINGUISHING AGENTS:	As for surrounding fire*
FLASHPOINT AND METHOD:	Not applicable
UPPER FLAMMABLE LIMIT:	Not applicable
LOWER FLAMMABLE LIMIT:	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
HAZARDOUS COMBUSTION PRODUCTS:	Not applicable
SENSITIVITY TO MECHANICAL IMPACT:	No special sensitivity
SENSITIVITY TO STATIC DISCHARGE:	Not sensitive
FIREFIGHTING PROCEDURES:	As for surrounding fire*

* Water reacts exothermically with magnesium oxide to produce magnesium hydroxide and heat/steam. Avoid water contact in closed or restricted storage vessels as heat, swelling, and rupture of storage vessel may occur.

SECTION 6 – ACIDENTAL RELEASE MEASURES**LEAK AND SPILL PROCEDURES:**

Pick-up spills without creating dust. Place material into a dry container and cover. Hold in sealed container for disposal. Use personal protective equipment as required (See Section 8 - Exposure Controls and Personal Protection).

SECTION 7 – HANDLING AND STORAGE**HANDLING PROCEDURES AND EQUIPMENT:**

Avoid inhalation of dust. Clean area frequently to avoid dust build-up. Wear applicable personal protective equipment as indicated in Section 8 – Exposure Controls and Personal Protection.

STORAGE REQUIREMENTS:

Store in a dry area in sealed containers. Keep away from incompatible materials such as interhalogens and strong acids. Avoid contact with water - product reacts exothermically with water to form magnesium hydroxide and heat/steam. Water contact in closed or restricted storage vessels may cause heat, swelling, and possible rupture of storage vessel.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION**ENGINEERING CONTROLS:**

Engineering controls may include process enclosure and/or local exhaust ventilation to maintain dust concentrations below allowable exposure limits. Local exhaust ventilation with or without process enclosure is important where large quantities are handled, as in bagging operations.

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: If adequate engineering controls are not available, wear respirator approved by NIOSH/MSHA for dusts/mists, as applicable. If magnesium oxide fume is likely to be produced then ensure that a NIOSH/MSHA respirator approved for fumes is used. In conditions of oxygen deficiency, or where airborne concentrations exceed $100\text{mg}/\text{m}^3$, wear positive pressure or pressure demand supplied air respiratory protection or SCBA.

EYE/SKIN PROTECTION: Wear safety goggles in high dust concentrations, unless full face-piece respiratory protection is worn. Wear coveralls.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White to light brown powder/granules	MELTING POINT:	Approx. 2800°C
ODOUR :	Odourless	SPECIFIC GRAVITY:	3.58 g/cc
PHYSICAL STATE:	Solid	EVAPOURATION RATE:	Not applicable
pH:	10.3 (Sat. aq. sol'n)	PARTITION COEFF.:	Not applicable
VAPOUR PRESSURE:	Not applicable	ODOUR THRESHOLD:	Not applicable
VAPOUR DENSITY:	Not applicable	VISCOSITY:	Not applicable
BOILING POINT:	Approx. 3600°C	WATER SOLUBILITY (@20°C):	0.0006 g/100ml

SECTION 10 – STABILITY AND REACTIVITY**CHEMICAL STABILITY:**

Stable under normal conditions.

CONDITIONS TO AVOID:

Avoid contact with water - product reacts exothermically with water to form magnesium hydroxide and heat/steam.

INCOMPATIBLE SUBSTANCES:

Strong Acids, Interhalogens (eg. Bromine pentafluoride, chlorine tri-fluoride), phosphorous pentachloride.

HAZARDOUS DECOMPOSITION PRODUCTS:

Magnesium fume may be generated if heated to volatilization. Heat and Steam may be generated upon contact with water.

HAZARDOUS POLYMERIZATION:

Does not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

LD50/LC50: No Data Available

IRRITANCY: May cause irritancy of eyes, skin or nasal passages

SENSITIZER: No Data Available

CARCINOGEN: Magnesium oxide (CAS#1309-48-4) is not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP or OSHA

TERATOGEN: No Data Available

REPRODUCTIVE TOXIN: No Data Available

MUTAGEN: No Data Available

SYNERGISTIC PRODUCTS: None Known

SECTION 12 – ECOLOGICAL INFORMATION

No Data Available

SECTION 13 – DISPOSAL CONSIDERATIONS**WASTE DISPOSAL:**

This product does not meet the criteria of a hazardous waste. Dispose in accordance with all applicable Federal, Provincial/State, and local Environment Regulations.

SECTION 14 – TRANSPORT INFORMATION**SPECIAL SHIPPING INFORMATION:**

No special requirements

CANADIAN TGD: Not regulated. No PIN number assigned.**U.S. DOT:** Not regulated by DOT. No UN number assigned.**MARITIME TRANSPORT:**

IMDG: Not Regulated

Marine Pollutant: Not Listed

SECTION 15 – REGULATORY INFORMATION**INVENTORY/REGULATORY LISTS:**

Magnesium Oxide is reported on the following national inventory and/or regulatory lists:

Australia	-	Australian Inventory Of Chemical Substances (AICS):	1309-48-4
Canada	-	Domestic Substance List (DSL):	1309-48-4
Europe	-	European Inventory Of Existing Commercial Chemical Substances (EINECS):	215-171-9
Japan	-	Existing And New Chemical Substances (ENCS):	1-465
Korea	-	Existing And Evaluated Chemical Substances (KECL):	KE-22728
Phillipines	-	Inventory of Chemicals and Chemical Substances (PICCS):	Magnesium Oxide
USA	-	Toxic Substance Control Act (TSCA) Inventory List 8(b):	1309-48-4

WHMIS: WHMIS CLASSIFICATION: Does not meet criteriaThis product is listed on the WHMIS Ingredient Disclosure List: Magnesium Oxide (Item # 959)
Calcium Oxide (Item #304)

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS contains all of the information required by the CPR.

CEPA: This product is not listed as a toxic substance under the Canadian Environmental Protection Act (CEPA 1999).**CERCLA:** Not listed as a hazardous substance**SARA TITLE III:****Section 302:** Product is not listed as an Extremely Hazardous Substance (EHS).**Section 304:** Emergency Release Notification not required.**Section 311/312:** Hazard Category: Acute (nuisance dust).
MSDS, chemical inventory, Tier I/II reporting are applicable .**Section 313:** Product is not subject to Form R reporting.**SECTION 16 – OTHER INFORMATION**

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied, regarding the accuracy, correctness, or suitability of this information for application to the purchasers intended use. The conditions or methods of handling, storage, use and disposal of the product are beyond our control. We, therefore, do not assume the responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.