SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product identifier : Magnesium Oxide
Other identifier : None

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/preparation : For use in industrial applications such as rubber, plastics and other specialty applications.

1.3. Details of the supplier of the safety data sheet
Carbon Enterprises Inc.
PO Box 787
28205 Scippo Creek Rd
Circleville, OH 43113
800-344-5770
info@ceifiltration.com
ceifiltration.com

1.4. Emergency telephone number
Emergency number 740-420-6472
9:00 AM to 4:30 PM
Monday through Friday

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (GHS-US) This product is not classified as hazardous according to the criteria in the 2012 OSHA Hazard Communication Standard (29CFR 1910.1200).

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US) : None
Signal word (GHS-US) : None
Hazard statements (GHS-US) : This mixture does not meet the criteria for classification.
Precautionary statements (GHS-US) : None

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium oxide</td>
<td>(CAS No) 1309-48-4</td>
<td>98</td>
<td>Not classified</td>
</tr>
<tr>
<td>Oxides of silicon, iron, aluminum, and calcium</td>
<td>(CAS No) mixture</td>
<td>2</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting.
4.2. **Most important symptoms and effects, both acute and delayed**

- **Symptoms/injuries**: Not expected to present a significant hazard under anticipated conditions of normal use. Do not breathe dust.
- **Symptoms/injuries after inhalation**: Inhalation may cause: irritation, cough, shortness of breath.
- **Symptoms/injuries after skin contact**: Effects of skin contact may include: skin irritation.
- **Symptoms/injuries after eye contact**: May cause eye irritation.
- **Symptoms/injuries after ingestion**: Ingestion generally causes purging of the bowels. Swallowing large amounts may cause bowel obstruction.

4.3. **Indication of any immediate medical attention and special treatment needed**

No additional medical information found. If you feel unwell, seek medical advice.

**SECTION 5: Firefighting measures**

5.1. **Extinguishing media**

- **Suitable extinguishing media**: Not combustible. If there is a fire close by, use suitable extinguishing agents. Water fog. Carbon dioxide. Dry powder. Foam.
- **Unsuitable extinguishing media**: None known.

5.2. **Special hazards arising from the substance or mixture**

- **Fire hazard**: If heated to decomposition (>1700°C), magnesium oxide fumes may be generated.
- **Explosion hazard**: Product is not explosive.
- **Reactivity**: Reacts with: Incompatible materials.

5.3. **Advice for firefighters**

- **Firefighting instructions**: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from firefighting to enter drains or water courses.
- **Protection during firefighting**: Do not enter fire area without proper protective equipment, including respiratory protection.
- **Other information**: No additional risk management measures required.

**SECTION 6: Accidental release measures**

6.1. **Personal precautions, protective equipment and emergency procedures**

- **General measures**: Avoid creating or spreading dust. Dust deposited may be vacuum cleaned.

6.1.1. **For non-emergency personnel**

- **Protective equipment**: Where excessive dust may result, use approved respiratory protection equipment.
- **Emergency procedures**: Evacuate unnecessary personnel.

6.1.2 **For emergency responders**

- **Protective equipment**: Where excessive dust may result, use approved respiratory protection equipment.
- **Emergency procedures**: Ventilate area. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

6.2. **Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. **Methods and material for containment and cleaning up**

- **Protective equipment**: Where excessive dust may result, use approved respiratory protection equipment.
- **Methods for cleaning up**: On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. **Reference to other sections**

See Heading 8. Exposure controls and personal protection.

**SECTION 7: Handling and storage**

7.1. **Precautions for safe handling**

- **Precautions for safe handling**: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of dust.
Hygiene measures: Smoking, eating and drinking should be prohibited in areas of storage and use. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

### 7.2. Conditions for safe storage, including any incompatibilities

- **Storage conditions**: Keep only in the original container in a cool, well ventilated place away from incompatible materials. Keep container closed when not in use.
- **Incompatible materials**: ACID (Strong) – vigorous reaction, heat generated; Chlorine Trifluoride reacts violently, producing flame; Phosphorous pentachloride – incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

### 7.3. Specific end use(s)
Reference Section 1.2.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Magnesium oxide (1309-48-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USA ACGIH</strong></td>
</tr>
<tr>
<td><strong>USA ACGIH</strong></td>
</tr>
<tr>
<td><strong>USA OSHA</strong></td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

- **Appropriate engineering controls**: Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Provide local exhaust ventilation of closed transfer systems to minimize exposures.

![Hand protection](image1)

- **Hand protection**: Wear protective gloves; dust impervious gloves.
- **Eye protection**: Chemical googles or safety glasses.
- **Respiratory protection**: In case of insufficient ventilation, wear suitable respiratory equipment.; Use air-purifying respirator equipped with particulate filtering cartridges.
  - UP TO 100 MG/M3: Any dust, mist or fume respirator; any air supplied respirator; or, self-contained breathing apparatus.
  - UP TO 250 MG/M3: Any supplied air respirator operated in a continuous flow mode or any powered air purifying respirator with a dust/mist/fume filter.
  - UP TO 500 MG/M3: High efficiency particulate filter with full face piece; any powered air supplied respirator with a tight fitting face piece and a high efficiency particulate filter; any self-contained breathing apparatus with a full face piece; any supplied air respirator with a full face piece.
  - UP TO 7500 MG/M3: Any air supplied respirator with full face piece and operated in a pressure demand or other positive pressure mode.
  - EMERGENCY or ENTRY INTO UNKNOWN CONCENTRATIONS: Self-contained breathing apparatus with full face piece and operated in pressure demand mode or air supplied respirator with full face piece operated in a pressure demand or other positive pressure mode in combination with auxiliary self-contained breathing apparatus operated in pressure demand or positive pressure mode.

- **Other information**: When using, do not eat, drink or smoke.

### SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

- Physical state: Solid
- Appearance: Powder
- Molecular mass: 40.3 g/mol
- Color: White
- Odor threshold: No data available
- Odor: Odorless
- pH: No data available
- pH solution: 10.3 saturated aqueous solution
- Melting point: 2827 (2797-2857) °C
- Freezing point: No data available
- Boiling point: 3600 °C
- Flash point: Product does not sustain combustion
- Self-ignition temperature: No data available
- Decomposition temperature: > 1700 °C
- Flammability (solid, gas): No data available
- Vapor pressure: No data available
- Vapor pressure at 50 °C: 0 hPa
- Relative vapor density at 20 °C: 0
- Relative density: No data available
- Density: 3.58 g/cm³
- Solubility: In water, material is partially soluble
- Log Pow: No data available
- Log Kow: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosive properties: Product is not explosive
- Oxidizing properties: No data available
- Explosive limits: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts with: Incompatible materials.

10.2. Chemical stability
Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Avoid contact with incompatible materials, excessive heat or cold, moisture.

10.5. Incompatible materials
ACID (Strong) – vigorous reaction, heat generated; Chlorine Trifluoride reacts violently, producing flame; Phosphorous Pentachloride – incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

10.6. Hazardous decomposition products
If magnesium oxide is heated to the point of volatilization (i.e., >1700°C), magnesium oxide fumes may be generated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified. (Based on available data, the classification criteria are not met.)
Magnesium oxide (1309-48-4)

<table>
<thead>
<tr>
<th></th>
<th>Magnesium oxide (1309-48-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>3990 mg/kg</td>
</tr>
<tr>
<td>ATE (oral)</td>
<td>3990.000 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified. (Based on available data, the classification criteria are not met)
Serious eye damage/irritation : Not classified. (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization : Not classified. (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified. (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified. (Based on available data, the classification criteria are not met)

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Magnesium oxide (1309-48-4)</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not established</td>
</tr>
</tbody>
</table>

12.3. Bio accumulative potential

<table>
<thead>
<tr>
<th>Magnesium oxide (1309-48-4)</th>
<th>Bio accumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not established</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste Treatment Methods
Waste treatment methods : Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Dispose in a safe manner in accordance with local/national regulations.
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology – waste materials : Avoid release to the environment.

SECTION 14: Transport information
14.1. **In accordance with DOT:** Not considered a dangerous good for transport regulations.

14.2. **In accordance with ADR:** Transport document description.

14.3. **Transport by sea:** No additional information available.

14.4. **Transport by air:** No additional information available.

### SECTION 15: Regulatory information

#### 15.1. **US Federal regulations**

<table>
<thead>
<tr>
<th>Magnesium oxide (1309-48-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
</tr>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
<td>Immediate (acute) health hazard</td>
</tr>
<tr>
<td></td>
<td>Delayed (chronic) health hazard</td>
</tr>
<tr>
<td></td>
<td>Fire hazard</td>
</tr>
<tr>
<td></td>
<td>Sudden release of pressure hazard</td>
</tr>
<tr>
<td></td>
<td>Reactive hazard</td>
</tr>
<tr>
<td>Sara Section 313 – Emission Reporting</td>
<td>Magnesium oxide is not hazardous and is not subject to Form R reporting requirements.</td>
</tr>
</tbody>
</table>

#### 15.2. **US State Regulations**

<table>
<thead>
<tr>
<th>Magnesium Oxide (1309-48-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>State or local regulations</td>
<td>U.S. - Illinois Right-to-Know Toxic Substances List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Massachusetts Right-to-Know</td>
</tr>
<tr>
<td></td>
<td>U.S. - Minnesota Right-to-Know</td>
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<tr>
<td></td>
<td>U.S. - New Jersey Right-to-Know</td>
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<td></td>
<td>U.S. - Pennsylvania Right-to-Know</td>
</tr>
<tr>
<td></td>
<td>U.S. - Rhode Island Right-to-Know</td>
</tr>
</tbody>
</table>

#### 15.3. **International regulations**

<table>
<thead>
<tr>
<th>Magnesium oxide (1309-48-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jurisdiction</td>
<td>List</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>Asia – PAC</td>
</tr>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
</tr>
<tr>
<td></td>
<td>National Pollutant Inventory</td>
</tr>
<tr>
<td></td>
<td>Priority Existing Chemicals</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances (IECSC)</td>
</tr>
<tr>
<td>Japan</td>
<td>Existing and New Chemical Substances (ENCS)</td>
</tr>
<tr>
<td>Korea</td>
<td>KECI (Chemical Inventory of Korea)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Inventory of Chemicals (NZIoC)</td>
</tr>
<tr>
<td>Philippines</td>
<td>Inventory of Chemicals and Chemical Substances (PICCS)</td>
</tr>
<tr>
<td>Europe</td>
<td>EEC International Cosmetics Ingredients Inventory (INCO)</td>
</tr>
<tr>
<td></td>
<td>EU REACH pre-registered</td>
</tr>
<tr>
<td></td>
<td>German Water Hazard Class Substances List</td>
</tr>
<tr>
<td></td>
<td>Switzerland Giftliste 1 (List of Toxic Substances)</td>
</tr>
<tr>
<td>Canada</td>
<td>Canadian Domesticated Substances List (DSL)</td>
</tr>
<tr>
<td></td>
<td>WHMIS Ingredient List</td>
</tr>
<tr>
<td>United States</td>
<td>ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td>EPA Pesticide Inert Ingredients</td>
</tr>
<tr>
<td></td>
<td>FDA Priority-based Assessment of Food Additives (PAFA)</td>
</tr>
<tr>
<td></td>
<td>FDA Regulations</td>
</tr>
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<td></td>
<td>High Production Volume Chemicals (HPV)</td>
</tr>
<tr>
<td></td>
<td>National Toxicology Program Technical Reports List</td>
</tr>
<tr>
<td></td>
<td>NIOSH Hazard, Toxicology, and Use Information</td>
</tr>
<tr>
<td></td>
<td>NIOSH Health Hazards</td>
</tr>
<tr>
<td></td>
<td>NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td>OSHA Permissible Exposure Limits</td>
</tr>
<tr>
<td></td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
</tr>
</tbody>
</table>
16.1. Indication of changes:
15 Modified Clarified SARA 311/312 and 313 reporting requirements

16.2. Data Sources
: ACGIH 2000
      Chemical Inspection & Regulation Services; accessed at:
      http://www.cirsreach.com/inventory/global_Chemical_Inventories.html
      Ind. Exposure & Control Techn. for OSHA Regulated Substances – MgO (fume), March 1989, pp. 1181-1184
      on classification, labelling and packaging of substances and mixtures, amending and repealing DIRECTIVES
      RTECS, June 1998.
      Sax - 8th Ed. TSCA Chemical Substance Inventory. Accessed at
      http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html

16.3. Abbreviations and acronyms
: ACGIH (American Conference of Government Industrial Hygienists).
      ATE: Acute Toxicity Estimate.
      CAS (Chemical Abstracts Service) number.
      EC50: Environmental Concentration associated with a response by 50% of the test population.
      GHS: Globally Harmonized System (of Classification and Labeling) of Chemicals.
      LD50: Lethal Dose of 50% of the test population.
      OSHA: Occupational Safety & Health Administration.
      TSCA: Toxic Substances Control Act.
      TWA: Time Weighted Average.

16.4. Other information
: None

16.5. NFPA
      NFPA health hazard : 0 – Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials
      NFPA fire hazard : 0 – Materials that will not burn.
      NFPA reactivity : 0 – Normally stable, even under fire exposure conditions, and are not reactive with water.

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