SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Magnesium oxide
Cat No.: 263830000; 263830025; 263835000
Synonyms: Magnesia
CAS-No: 1309-48-4
EC-No: 215-171-9
Molecular Formula: MgO

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

1.3. Details of the supplier of the safety data sheet

Company: UK entity/business name
Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

Company: EU entity/business name
Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium

E-mail address: begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No. US: 001-800-424-9300 / Europe: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Based on available data, the classification criteria are not met

Health hazards
Based on available data, the classification criteria are not met
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Environmental hazards
Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements

Hazard Statements

Precautionary Statements

2.3. Other hazards

Hydrolyses

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium oxide fume</td>
<td>1309-48-4</td>
<td>EEC No. 215-171-9</td>
<td>98</td>
<td>-</td>
</tr>
</tbody>
</table>

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion
Do NOT induce vomiting. Get medical attention.

Inhalation
Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Self-Protection of the First Aider
No special precautions required.

4.2. Most important symptoms and effects, both acute and delayed

No information available.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Non-combustible. Containers may explode when heated.

Hazardous Combustion Products
Magnesium oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

6.2. Environmental precautions

See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe dust.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.
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7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)  
Class 13

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>The United Kingdom</th>
<th>European Union</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium oxide fume</td>
<td>STEL: 30 mg/m$^3$ 15 min</td>
<td>TWA: 4 mg/m$^3$ 8 hr.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STEL: 12 mg/m$^3$ 15 min</td>
<td>fume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m$^3$ 8 hr</td>
<td>total inhalable dust</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 4 mg/m$^3$ 8 hr</td>
<td>STEL: 10 mg/m$^3$ 15 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 12 mg/m$^3$ 15 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 30 mg/m$^3$ 15 min</td>
<td></td>
</tr>
</tbody>
</table>

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Derived No Effect Level (DNEL)  No information available

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Acute effects (local)</th>
<th>Acute effects (systemic)</th>
<th>Chronic effects (local)</th>
<th>Chronic effects (systemic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration (PNEC)  No information available.

8.2. Exposure controls

Engineering Measures
None under normal use conditions.

Personal protective equipment
Eye Protection  Wear safety glasses with side shields (or goggles) (European standard - EN 166)
Hand Protection

<table>
<thead>
<tr>
<th>Glove material</th>
<th>Breakthrough time</th>
<th>Glove thickness</th>
<th>EU standard</th>
<th>Glove comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rubber</td>
<td>See manufacturers</td>
<td>-</td>
<td>EN 374</td>
<td>(minimum requirement)</td>
</tr>
<tr>
<td>Nitrile rubber</td>
<td>recommendations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neoprene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

No protective equipment is needed under normal use conditions.

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particle filter 2

Small scale/Laboratory use

Maintain adequate ventilation

Environmental exposure controls

No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State

Powder Solid

Appearance

White

Odor

Odorless

Odor Threshold

No data available

Melting Point/Range

2800 °C / 5072 °F

Softening Point

No data available

Boiling Point/Range

3600 °C / 6512 °F

Flammability (liquid)

Not applicable

Flammability (solid,gas)

No information available

Explosion Limits

No data available

Flash Point

No information available

Autoignition Temperature

No data available

Decomposition Temperature

No data available

pH

10.3

Viscosity

Not applicable

Water Solubility

hydrolyses

Solubility in other solvents

No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure

0 hPa @ 20 °C

Density / Specific Gravity

3.580

Bulk Density

No data available

Vapor Density

Not applicable

Particle characteristics

No data available
SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
None known, based on information available

10.2. Chemical stability
Unstable on exposure to moisture, Moisture sensitive.

10.3. Possibility of hazardous reactions
Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
No information available.

10.4. Conditions to avoid
Incompatible products. Exposure to air. Exposure to moist air or water.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Magnesium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information
No acute toxicity information is available for this product

(a) acute toxicity;
   Oral
   No data available
   Dermal
   No data available
   Inhalation
   No data available

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium oxide fume</td>
<td>LD50 = 3990 mg/kg ( Rat )</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 = 3870 mg/kg ( Rat )</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation;
No data available

(c) serious eye damage/irritation;
No data available

(d) respiratory or skin sensitization;
   Respiratory
   No data available
   Skin
   No data available

(e) germ cell mutagenicity;
No data available
Magnesium oxide

(f) carcinogenicity;  
No data available
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;  
No data available

(h) STOT-single exposure;  
No data available

(i) STOT-repeated exposure;  
No data available
  Target Organs  
  No information available.

(j) aspiration hazard;  
Not applicable
  Solid

Other Adverse Effects  
The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed  
No information available.

11.2. Information on other hazards

Endocrine Disrupting Properties  
Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects  
Reacts with water so no ecotoxicity data for the substance is available.

12.2. Persistence and degradability
  Persistence  
  Soluble in water. Persistence is unlikely, based on information available.
  Degradability  
  Not relevant for inorganic substances, Decomposes in contact with water.
  Degradation in sewage treatment plant  
  Decomposes in contact with water.

12.3. Bioaccumulative potential  
Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water.

12.4. Mobility in soil  
The product is water soluble, and may spread in water systems Hydrolyses. Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment. Highly mobile in soils

12.5. Results of PBT and vPvB assessment  
Hydrolyses.

12.6. Endocrine disrupting properties
Endocrine Disruptor Information  
This product does not contain any known or suspected endocrine disruptors
12.7. Other adverse effects
Persistent Organic Pollutant
This product does not contain any known or suspected substance
Ozone Depletion Potential
This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues/Unused Products
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated Packaging
Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

European Waste Catalogue (EWC)
According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information
Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

Not regulated

ADR

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

Not regulated

IATA

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

Not regulated

14.5. Environmental hazards
No hazards identified

14.6. Special precautions for user
No special precautions required

14.7. Maritime transport in bulk according to IMO instruments
Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories
X = listed, Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC), Japan (ENCS), Australia (AICS), Korea (ECL).

ACR26383
Not applicable

National Regulations

WGK Classification
See table for values

<table>
<thead>
<tr>
<th>Component</th>
<th>Germany - Water Classification (VwVwS)</th>
<th>Germany - TA-Luft Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium oxide fume</td>
<td>WGK1</td>
<td></td>
</tr>
</tbody>
</table>

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the
date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,
transportation, disposal and release and is not to be considered a warranty or quality specification. The information
relates only to the specific material designated and may not be valid for such material used in combination with any other
materials or in any process, unless specified in the text

End of Safety Data Sheet