

Premier TechMag, Green Briquettes and Magnesia Fines**Revision Date:** September 2013
Former Date: September 2009**Revision Number:** 3
Date printed: 30 October 2013**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING****1.1 Product identifier**

Substance name	Magnesium Oxide
Synonyms	Calcined Magnesia, Caustic Calcined Magnesia, Light Burned Magnesia & Pelletised Magnesia
Chemical name and formula	Magnesium Oxide (MgO)
Trade name	Premier TechMag Magnesia Premier Magnesia Fines and Premier Green Briquettes
CAS	1309-48-4
EINECS	215-171-9
Other Identification Codes	Korea: KE-22728, Japan: 1-465, Switzerland: G-2368, RTEC: OM ³ 850000, N ⁰ ICSC (International Chemical Safety Cards): 0504
Molecular weight	40.3044 g/mol
REACH – Registration Number	Not applicable as Magnesium Oxide is exempted from REACH under Regulation (EC) No. 1907/2006: Annex V, paragraph 10

1.2 Relevant identified uses of the substance and uses advised against**Identified Uses** Leather tanning, mineral cables, Magnesia supplement in animal feed and other uses.**Uses Advised Against** None known**1.3 Details of the supplier of the safety data sheet****Name** Premier Periclase Ltd.
Address Boyne Road, Drogheda
Co. Louth, Ireland
Phone no: **+353 41 9870700**
Fax no: **+353 41 9870706**
E-mail of competent person responsible for SDS **ppl.info@rhi-ag.com**

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Beaumont Hospital, Beaumont Road,
Dublin 9, Ireland**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance**

This material is not classified as dangerous or hazardous according to Council Directives **67/548/EEC** and **1272/2008/EC**. Product dust may be slightly irritating to the nose and eyes.

2.2 Label elements**2.2.1 Labelling according to Regulation (EC) 1272/2008**

None required

2.2.2 Labelling according to Directive 67/548/EEC

None required

2.3 Other hazards

The substance does not meet the criteria for PBT or vPvB substance.
No other hazards identified.

3. COMPOSITION / INFORMATION ON INGREDIENTS**3.1 Substances**

The oxides shown in the typical chemical analysis do not exist within the sintered Magnesia as free, uncombined oxides. They are combined in complex mineralogical phases. Analyses are reported in the oxide form for convenience only.

Component Name	Chemical Formula	Typical Weight (%)	EINECS Number	CAS Number
Magnesium Oxide	MgO	97.2	215-171-9	1309-48-4
Calcium Oxide	CaO	2.1	215-138-9	1305-78-8
Calcium Sulphate	CaSO ₄	1.5	231-900-3	7778-18-9
Sodium Chloride	NaCl	0.8	231-598-3	7647-14-5

Other minor impurities (below 1% concentration) present include:

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SiO₂ (0.25%), Fe₂O₃ (0.20%), Mn₃O₄ (0.10%), Cr₂O₃ (0.10%), Al₂O₃ (0.07%) and B₂O₃ (0.02%)

These impurities do not exist in free, uncombined form. They are combined in complex mineralogical phases. The values quoted are typical. Analyses are reported in the oxide form for convenience only.

4. FIRST AID MEASURES**4.1 Description of first aid measures**

If medical advice is required, bring this SDS with you.

Inhalation

This material is considered a nuisance particulate; consequently no significant toxic effects are expected when exposures are kept under reasonable control. Adhere to established airborne exposure limits. May cause mechanical respiratory tract irritation. If irritation occurs, move the victim to fresh air. Seek medical advice depending on the severity of the exposure.

Skin Contact

The material is not absorbed through the skin, therefore it is not significantly hazardous upon skin contact. It is capable of causing minor skin irritation at most. If irritation occurs, wash gently and thoroughly with water and non-abrasive soap. If irritation persists, seek medical advice.

Eye Contact

Other than possible mechanical irritation, no adverse effects are expected. If irritation occurs, rinse eyes with lukewarm, gently flowing water until the particles have been removed. If the irritation persists, obtain medical advice.

Ingestion

The material is low in single dose oral toxicity. If ingestion occurs, rinse mouth with water and also drink some water. Deliberate ingestion of large quantities can result in abdominal cramps, diarrhoea or bowel obstruction. If this occurs, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

May cause irritation of the eyes, nose and throat, long term exposure may lead to increased risks of chronic respiratory illness

4.3 Indication of any immediate medical attention and special treatment needed

Follow advice given in section 4.1

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As for surrounding fire, CO₂, powder or water spray. The material is non-flammable and is not an explosion hazard.

5.1.2 Unsuitable Extinguishing Media

None known

5.2 Special hazards arising from the substance of mixture

None known

5.3 Advice for fire fighters

Avoid generation of dust. Use breathing apparatus. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal Precautions, protective equipment and emergency procedures**

No special personal precautions required. Keep dust levels to a minimum

6.2 Environmental Precautions

The product has low toxicity and presents no unusual danger to the environment under most circumstances. Where possible, do not allow into waterways or onto bare soil.

Avoid contact with halogens and strong acids.

6.3 Methods and materials for containment and cleaning up

For small spillages use a standard industrial vacuum cleaner. Small spillages can be washed away with water subject to local waste water disposal regulations.

Sweep or collect spilled material in a manner to avoid dust generation and put into appropriate containers. Reclaim product for reuse or dispose in an appropriate manner. For disposal of larger spillages see Section 13. Wash contaminated clothing to avoid possible irritation.

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Avoid operations that could lead to formation of a dust cloud, ensure there is sufficient ventilation and dust extraction in the workplace. Avoid inhaling dust.

7.1.2 Advice on general occupational hygiene

Handle material in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when handling or using this material. Clean work area regularly to prevent a build-up of dust.

7.2 Conditions for safe storage, including any incompatibilities

Keep packaging dry and properly sealed when not in use. Product should be stored in a dry, ventilated storage facility. Avoid contact with Interhalogen products, such as Chlorine Trifluoride (ClF₃) or Bromine Pentafluoride (BrF₅) and sublimed Sulphur, Magnesium or Aluminium powder

7.3 Specific Uses

As described in Section 1.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters**

Substance	Long term (8 hour) limit (mg/m ³)	Short term (15 mins) limit (mg/m ³)	Status
Magnesium Oxide (as Mg)			
Respirable Dust	4	Not assigned	UK WEL (EH40/2011)
Fume	4	Not assigned	UK WEL (EH40/2011)
Inhalable Dust	10	Not assigned	UK WEL (EH40/2011)
	10	Not assigned	ACGIH (2007 TLV)

8.2 Exposure controls

The material is classified as non-hazardous. To control potential exposures, generation of dust should be avoided.

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. Where possible, avoid formation of dust. Use appropriate dust extraction systems to keep air-borne levels below the recommended exposure limits outlined in 8.1 above.

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No specific requirement but it is recommended to wear safety goggles or glasses with side protection.

8.2.2.2 Skin protection

No specific requirement, but it is good practice to minimise contact with skin by wearing clean body cover clothing and shoes. It is good practice to wear appropriate gloves when handling material.

8.2.2.3 Respiratory protection

In most cases a disposable respirator that meets the European Standard EN 149 FFP2 will provide sufficient protection. Ambient dust concentrations should be monitored regularly and if they exceed the recommended exposure limit, then an approved dust respirator, appropriate for the measured concentrations, must be worn.

8.2.2.4 Thermal hazards

The substance does not represent a thermal hazard, thus special consideration is not required.

8.2.3 Environmental exposure controls

Avoid releasing to the environment. In the event of accidental release into surface or groundwater systems or the public sewerage system, appropriate control measures should be put in place. If necessary, the relevant local authority or competent body should be consulted before control measures are set up. Disposal should comply with local disposal and waste regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance / Form	Powder, grain or pellets
Colour	Off-white or pinkish
Odour	Odourless
pH Value	Not applicable
Boiling Point	3,600 deg. C
Melting Point	2,800 deg.C
Flash Point	Not applicable
Flammability	Product not flammable
Explosive Properties	Product not explosive
Oxidising Properties	Product is not an oxidising agent
Bulk Density	2000 kg/m ³
Vapour Pressure	Not applicable
Vapour Density	Not applicable (material not volatile)

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Solubility	Practically insoluble in water (0.006g/l @ 20 deg.C). The material will hydrate slowly when exposed to water. Soluble in strong acids. Insoluble in alcohol.
Partition Co-efficient	Not applicable
Viscosity	Not applicable (solid)

9.2 Other information

None available.

10. STABILITY AND REACTIVITY**10.1 Reactivity**

Magnesium Oxide reacts very slowly with water and acids.

10.2 Chemical stability

Product is stable under normal conditions of use and storage.

10.3 Possibility of hazardous reactionsMagnesium Oxide is soluble in strong acids, generating heat or steam. It reacts violently with Interhalogens such as Chlorine Trifluoride (ClF₃), Bromine Pentachloride (BrF₅) or Phosphorous Pentachloride (PCl₅). Incandescent reaction with Phosphorous Pentachloride.**10.4 Conditions to avoid**Avoid exposure to moisture or air which will cause the substance to hydrate very slowly to form Magnesium Hydroxide (Mg(OH)₂). Heat may be generated by this process. Avoid contact with incompatible materials (section 10.5).**10.5 Incompatible materials**Magnesium Oxide is incompatible with Interhalogens such as Chlorine Trifluoride (ClF₃), Bromine Pentachloride (BrF₅) or Phosphorous Pentachloride (PCl₅). Incandescent reaction with Phosphorous Pentachloride.

The material is also incompatible with sublimed Sulphur and Magnesium or Aluminium powders. It also reacts with oxidising agents.

10.6 Hazardous decomposition products

No known hazardous decomposition products exist.

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

a. Acute toxicity

Magnesium Oxide is not classified in Annex I of Directive 67/548/EEC or in Council Regulation 1272/2008/EC and is not listed in a priority list (as foreseen under Council Regulation (EEC) No. 793/93 on the evaluation and control of the risks of existing substances).

LD ₅₀ , L(E)C ₅₀	Not available
400mg/m ³	Lowest published toxic concentration; human, inhalation exposure. Effect – no details reported (Source: RTECS).
4mg/m ³	Lowest published toxic concentration; mammal (specied not identified), inhalation exposure. Effect – body temperature increase (Source: RTECS).
Oral Route	No details reported
Inhalation	Short-term inhalation of dust or fume may cause temporary irritation of the upper respiratory tract, skin, nose and eyes. No known allergic responses.
Dermal Route	Material not absorbed by intact skin. Intimate contact with uncovered skin may cause some irritation, drying or chapping.

b. Skin corrosion/irritation

Magnesium Oxide may cause slight skin irritation as a result of mechanical abrasion

c. Serious eye damage/irritation

Magnesium Oxide may cause slight eye irritation as a result of mechanical abrasion

d. Respiratory or skin sensitisation

No information

e. Germ cell mutagenicity

In view of the omnipresence and essentiality of Mg, MgO is not expected to have any genotoxic potential, including germ cell mutagenicity. Classification for genotoxicity is not warranted.

f. Carcinogenicity

Substance not classified as carcinogenic under ACGIH, NIOSH, IARC, NTP or OSHA.

g. Reproductive toxicity

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Magnesium Oxide is not known to adversely affect fertility or the unborn child.

h. Specific target organ toxicity -single exposure**i. Specific target organ toxicity repeated exposure**

Human – 800mg/m³, no observed effect.
Cattle (gastro-intestinal system), 1% in diet irritating effect.
Rat – 3mg/m³ no observed effect after repeated exposure

j. Aspiration hazard

Magnesium Oxide is not known to present an aspiration hazard.

12. ECOLOGICAL INFORMATION**12.1 Toxicity****12.1.1 Acute/Prolonged toxicity to fish**

No data, believed to be of low toxicity.

12.1.2 Acute/Prolonged toxicity to aquatic invertebrates

No data, believed to be of low toxicity.

12.1.3 Acute/Prolonged toxicity to aquatic plants

No data, believed to be of low toxicity.

12.1.4 Toxicity to micro-organisms e.g. bacteria

No data, believed to be of low toxicity.

12.1.5 Chronic toxicity to aquatic organisms

No data, believed to be of low toxicity.

12.1.6 Toxicity to soil dwelling organisms

No data, believed to be of low toxicity.

12.1.7 Toxicity to terrestrial plants

No data, believed to be of low toxicity.

12.1.8 General effect

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Magnesium Oxide is made from naturally occurring substances that are low in toxicity. It should present no unusual hazards to the environment. Accidental spillage may be dangerous if the substance comes in contact with incompatible materials such as those outlined in Section 10.

12.1.9 Further information

None available

12.2 Persistence and degradability

The substance reacts very slowly with water, eventually producing Magnesium Hydroxide ($Mg(OH)_2$). The reaction is self-limiting because of the formation of insoluble Magnesium Hydroxide. No other data on degradation is available.

12.3 Bioaccumulative potential

The substance is not considered to be a bioaccumulative risk.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB substance.

12.6 Other adverse effects

None known.

13. DISPOSAL CONSIDERATIONS

Dispose of the substance in accordance with local, regional, national or international regulations at an approved disposal site. Do not dispose into water systems. Disposal to authorised landfill may be acceptable.

Waste code according to EWC/AVV: 060316 (European Waste Code)**14. TRANSPORT CONSIDERATIONS**

No restrictions. Magnesium Oxide is not classified as hazardous for conveyance or supply under EU or UN regulations.

Prepared in accordance with Annex II of the REACH Regulation EG 1907/2006, Regulation (EG) 1272/2008 and Regulation (EU) 453/2010

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14.1 UN Number

Not listed

14.2 UN proper shipping name

Magnesia powder, Caustic Calcined Magnesia, Light Burned Magnesia

14.3 Transport hazard class

None

14.4 Packing group

None

14.5 Environmental hazards

None

14.6 Special precautions for user

Avoid any release of dust during transportation, by using covered trucks.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG (sea)	Not applicable
ADR (goods by road)	Not applicable
RID (goods by rail)	Not applicable
ICAO / IATA (air)	Not applicable

15. REGULATORY INFORMATION

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

This SDS is issued in accordance with the Safety, Health and Welfare at Work Regulations (Chemical Agents) Regulations 2001, SI 619 of 2001.

The material is not classified as hazardous according to Council Directives 67/548/EEC and 1272/2008/EC.

The substance, Magnesium Oxide, is exempted from Regulation 1907/2006 (REACH): Annex V paragraph 10.

Magnesium oxide is not a SEVESO substance, not an ozone depleting substance and not a persistent organic pollutant.

Other relevant legislation: 1999/45/EC, 2001/58/EC, 2006/58/EC (30ATP) and 2006/8/EC

Hazard symbol

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None

15.2 Chemical Safety Assessment

Not applicable, material exempted from Regulation 1907/2006 (REACH): Annex V paragraph 10.

This safety data sheet does not constitute the user's own assessment of workplace risk. A full risk assessment, as required by the regulations listed in this section, should be carried out before working with this substance.

16. OTHER INFORMATION**16.1 Hazard Statements**

None

16.2 Precautionary Statements

P102: Keep out of reach of children
P280: Wear protective gloves/protective clothing/eye protection/face protection
P305+P351: IF IN EYES: Rinse cautiously with water for several minutes
P302+P352: IF ON SKIN: Wash with plenty of soap and water
P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P501: Dispose of contents/container in accordance with national regulation

16.3 Risk Phrases

None

16.4 Safety Phrases

S2: Keep out of the reach of children
S25: Avoid contact with eyes
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S37: Wear suitable gloves
S39: Wear eye/face protection

It is recommended that users ensure that the information contained in the safety data sheet (SDS) is brought to the attention of their employees and others handling this product. Distributors of the product are advised to forward this SDS to their customers.

The information contained in this safety data sheet is believed to be reliable. No guarantee is implied or expressed regarding the accuracy of the information or the use of the product since conditions of use are beyond our control.

16.5 Abbreviations

EC₅₀: median effective concentration
LC₅₀: median lethal concentration
LD₅₀: median lethal dose
NOEC: no observable effect concentration

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OEL: occupational exposure limit
PBT: persistent, bioaccumulative, toxic chemical
PNEC: predicted no-effect concentration
STEL: short-term exposure limit
TWA: time weighted average
vPvB: very persistent, very bioaccumulative chemical

16.6 References

16.7 Revision

Version: 3
Date of Issue: May 2013
Date of Previous Issue: November 2011

Changes made in version 3: SDS reformatted, fax number, telephone number, e-mail contact, precautionary statements and safety phrases added.

Disclaimer

This safety data sheet (SDS) is based on the legal provisions of the REACH Regulation (EC 1907/2006; article 31 and Annex II), as amended. Its contents are intended as a guide to the appropriate precautionary handling of the material. It is the responsibility of recipients of this SDS to ensure that the information contained therein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. Information and instructions provided in this SDS are based on the current state of scientific and technical knowledge at the date of issue indicated. It should not be construed as any guarantee of technical performance, suitability for particular applications, and does not establish a legally valid contractual relationship. This version of the SDS supersedes all previous versions.

End of the Safety Data Sheet