

**Premier LC, SKLS, NP Sinter magnesia**Revision Date: September 2013  
Former Date: November 2011Revision Number: 3  
Date printed: 30 October 2013**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING****1.1 Product identifier**

<b>Substance name</b>	Magnesium Oxide
<b>Synonyms</b>	Dead burned Magnesia, Sintermagnesia, Periclase
<b>Chemical name and formula</b>	Magnesium Oxide (MgO)
<b>Trade name</b>	Premier <b>LC</b> Sintermagnesia Premier <b>SKLS</b> Sintermagnesia Premier <b>NP</b> Sintermagnesia
<b>CAS</b>	1309-48-4
<b>EINECS</b>	215-171-9
<b>Other Identification Codes</b>	Korea: KE-22728, Japan: 1-465, Switzerland: G-2368, RTEC: OM <sup>3</sup> 850000, N <sup>0</sup> ICSC (International Chemical Safety Cards): 0504
<b>Molecular weight</b>	40.3044 g/mol
<b>REACH – Registration Number</b>	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**

<b>Identified Uses</b>	Refractory applications in the Iron & Steel, Cement & Glass Industries
<b>Uses Advised Against</b>	None known

**1.3 Details of the supplier of the safety data sheet**

<b>Name</b>	Premier Periclase Ltd.
<b>Address</b>	Boyne Road, Drogheda Co. Louth, Ireland
<b>Phone no:</b>	<b>+353 41 9870700</b>
<b>Fax no:</b>	<b>+353 41 9870706</b>
<b>E-mail of competent person responsible for SDS</b>	<b>ppl.info@rhi-ag.com</b>

**1.4 Emergency telephone number**

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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

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

SiO<sub>2</sub> (0.25%), Fe<sub>2</sub>O<sub>3</sub> (0.20%), Mn<sub>3</sub>O<sub>4</sub> (0.10%), Cr<sub>2</sub>O<sub>3</sub> (0.10%), Al<sub>2</sub>O<sub>3</sub> (0.07%) and B<sub>2</sub>O<sub>3</sub> (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.

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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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**5. FIRE – FIGHTING MEASURES****5.1 Extinguishing media****5.1.1 Suitable Extinguishing Media**

As for surrounding fire, CO<sub>2</sub>, 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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### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

##### 7.1.1 Protective measures

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 (ClF<sub>3</sub>) or Bromine Pentafluoride (BrF<sub>5</sub>) 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 <sup>3</sup> )	Short term (15 mins) limit (mg/m <sup>3</sup> )	Status
<b>Magnesium Oxide (as Mg)</b>			
Respirable Dust	4	Not assigned	UK WEL (EH40/2005)
Fume	4	Not assigned	UK WEL (EH40/2005)
Inhalable Dust	10	Not assigned	UK WEL (EH40/2005)
	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**

<b>Appearance / Form</b>	Granular solid or powder, 0 – 50mm
<b>Colour</b>	Brown or Green-brown
<b>Odour</b>	Odourless
<b>pH Value</b>	Not applicable
<b>Boiling Point</b>	3,600 deg. C
<b>Melting Point</b>	2,800 deg.C
<b>Flash Point</b>	Not applicable
<b>Flammability</b>	Product not flammable
<b>Explosive Properties</b>	Product not explosive
<b>Oxidising Properties</b>	Product is not an oxidising agent
<b>Bulk Density</b>	3380 – 3450 kg/m <sup>3</sup> (sintered product)
<b>Vapour Pressure</b>	Not applicable
<b>Vapour Density</b>	Not applicable (material not volatile)

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<b>Solubility</b>	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.
<b>Partition Co-efficient</b>	Not applicable
<b>Viscosity</b>	Not applicable (solid)

**9.2 Other information**

None available.

**10. STABILITY AND REACTIVITY****10.1 Reactivity**

Sintered 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 reactions**

Magnesium Oxide is soluble in strong acids, generating heat or steam. It reacts violently with Interhalogens such as Chlorine Trifluoride (ClF<sub>3</sub>), Bromine Pentachloride (BrF<sub>5</sub>) or Phosphorous Pentachloride (PCl<sub>5</sub>). 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)<sub>2</sub>). 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 (ClF<sub>3</sub>), Bromine Pentachloride (BrF<sub>5</sub>) or Phosphorous Pentachloride (PCl<sub>5</sub>). 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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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 <sub>50</sub> , L(E)C <sub>50</sub>	Not available
400mg/m <sup>3</sup>	Lowest published toxic concentration; human, inhalation exposure. Effect – no details reported (Source: RTECS).
4mg/m <sup>3</sup>	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/m<sup>3</sup>, no observed effect.  
Cattle (gastro-intestinal system), 1% in diet irritating effect.  
Rat – 3mg/m<sup>3</sup> 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.

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Not listed

**14.2 UN proper shipping name**

Periclase, Sintermagnesia, Deadburned 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**

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

**15. REGULATORY INFORMATION**

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**

None

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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### 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

EC<sub>50</sub>: median effective concentration  
LC<sub>50</sub>: median lethal concentration  
LD<sub>50</sub>: median lethal dose  
NOEC: no observable effect concentration  
OEL: occupational exposure limit  
PBT: persistent, bioaccumulative, toxic chemical  
PNEC: predicted no-effect concentration

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TWA: time weighted average  
vPvB: very persistent, very bioaccumulative chemical**16.6 References****16.7 Revision**Version: 3  
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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**