




# PRODUCT SAFETY DATA SHEET




(Prepared in accordance with Annex II of the REACH Regulation (EC) No 1907/2006)

date of print:


revised on: 14.03.2008

<b>1: Identification of the substance / preparation and of the company / undertaking</b>	
<b>1.1: Identification of the substance or preparation</b>	
Substance Name	<b>Dolomitic Lime / Dolomitic hydrated Lime</b>
Synonyms	Dolomitic Lime, Dolomitic quicklime, Calcined dolomite, Burnt dolomite, Dolomite dead burned refractory, Calcium magnesium oxide, Dolime Slaked dolime, Air slaked dolime, Building dolime, Autoclaved lime, Type S, Calcium magnesium tetrahydroxide
Chemical Name and Formula	<b>Calcium magnesium oxide – CaO.MgO</b> <b>Calcium magnesium tetrahydroxide – Ca(OH)<sub>2</sub> Mg(OH)<sub>2</sub></b>
Trade Name	<b>Desical spezial, Desical plus, Desical sensitiv, Desical aktiv, Desical forte, Desical poultry</b>
CAS N°	37247-91-9 Calcium magnesium oxide 5%-20% 39445-23-3 Slaked dolime 5%-20%
EINECS N°	253-425-0 Calcium magnesium oxide 254-454-1 Slaked dolime
Molecular Mass	96,39 g/mol 132,42 g/mol
<b>1.2: Material use</b>	Biocide uses
<b>1.3: Company identification</b>	
Name	KALKWERK HUGFARD GmbH
Address	Antoniusstrasse 2-4, 63768 Hösbach Rottenberg, Germany
Phone	+49 (0) 60 24 / 67 39 - 0
Fax	+49 (0) 60 24 / 67 39 - 70
<b>1.4: Emergency telephone</b>	
European Emergency N°	<b>112</b>
National centre for Prevention and Treatment of Intoxications N°	<b>Klinische Toxikologie, Universitätsklinikum Mainz Tel. +49 (0) 61 31 / 19 24 0</b>
<b>2: Hazard identification</b> <b>2.1: Indication of hazard</b>	<b><u>Xi irritant</u></b> 
<b>2.2: Human health</b>	
Risk phrases	<b>R37 Irritating to respiratory system</b> <b>R38 Irritating to skin</b> <b>R41 Risk of serious damage to eyes</b>
Warning phrase	Calcium magnesium oxide / Calcium magnesium tetrahydroxide, when diluted with water, can produce severe skin damage in humans, (alkaline burns) especially if prolonged skin contacts take place.
<b>3: Composition / information on ingredients</b>	
<b>3.1: Composition</b>	
Calcium magnesium oxide and minor constituents of geological origin.	

<b>4: First-aid measures</b>	
 <b>4.1: Eyes</b>	Irrigate eyes immediately with plenty of water and seek medical advice.
<b>4.2: Inhalation</b>	Move source of dust or move affected person to fresh air. Obtain medical attention immediately.
<b>4.3: Ingestion</b>	Wash mouth with water and drink copious quantities of water. Do not induce vomiting. Seek medical advice immediately.
 <b>4.4: Skin</b>	Carefully and gently brush the contaminated body surfaces in order to remove all traces of product. Wash affected area immediately with plenty of water for at least 15 to 20 minutes. Remove contaminated clothing. If necessary seek medical advice.
<b>4.5: General advise</b>	No known delayed effects. Consult a physician for all exposures except for minor instances.
<b>5: Fire-fighting measures</b>	
<b>5.1: Flammability</b>	The substance is not flammable, and non-combustible, it inhibits the spread of flame. The product reacts with water and generates heat. This may cause risk to flammable material.
<b>5.2: Extinguishing media</b>	The product does not burn. Avoid water and the humidification of the quicklime, use dry powder, foam or CO <sub>2</sub> type of fire extinguishers to fight the surrounding fire.
<b>5.3: Combustion products</b>	None
<b>6: Accidental release measures</b>	
<b>6.1: Personal precautions</b>	Avoid contact with skin and eyes, keep dust levels to a minimum, and ensure that sufficient ventilation or suitable respiratory protective equipment is used (section 8).
<b>6.2: Environmental precautions</b>	Contain the spillage. Keep the material dry if possible. Cover area if possible to avoid unnecessary dust hazard. Avoid uncontrolled spills to watercourses and drains (pH rising). Any large spillage into watercourses must be alerted to the Environment Agency or other regulatory body.
<b>6.3: Methods for cleaning up</b>	Keep the material dry if possible. Pick up the product mechanically in a dry way. Use vacuum suction unit, or shovel into bags.

<b>7: Handling and storage</b>	
<b>7.1: Handling</b> 7.1.1: Precautions for safe handling	Avoid contact with skin and eyes. Wear protective equipment (see section 8). Keep dust levels to a minimum. Minimise dust generation. Enclose dust sources, use exhaust ventilation (dust collector at handling points). Handling systems should preferably be enclosed. When handling bags usual precautions should be paid to the risks outlined in the Council Directive 90/269/EEC.
<b>7.2: Storage</b> 7.2.1: Precautions for safe storage	Store under dry conditions. Minimise contact with air and moisture. Bulk storage should be in purpose – designed silos. Keep away from acids, significant quantities of paper, straw, and nitro compounds. Keep out of reach of children. Do not use aluminium for transport or storage if there is a risk of contact with water.
7.3: Ventilation requirements	Ventilation equipment should be used in buildings to ensure appropriate dust levels when required.
<b>8: Exposure controls / personal protection</b>	
<b>8.1: Exposure limit values</b>	
8.1.1: CAS N° / EINECS N°	37247-91-9 / 253-425-0 / 39445-23-3 / 254-454-1
8.1.2: Chemical name	Calcium magnesium oxide / Calcium magnesium tetrahydroxide
8.1.3: Occupational exposure standard (OES)	Germany: 3mg/m <sup>3</sup> (A), 10 mg/m <sup>3</sup> (E)
<b>8.2: Exposure controls</b>	
8.2.1: Occupational exposure controls	Handling systems should preferably be enclosed or suitable ventilation installed to maintain atmospheric dust below the OES, if not wear suitable protective equipment.
8.2.1.1: Respiratory protection	 Use approved dust respirators to EN 149 category FFP2, or air stream-helmet for heavy exposure.
8.2.1.2: Hand protection	 Use approved nitrile impregnated gloves having CE marks.
8.2.1.3: Eye protection	 Tight fitting goggles with side shields, or wide vision full goggles. Do not wear contact lenses when handling this product. It is also advisable to have individual pocket eyewash.
8.2.1.4: Skin protection	Clothing fully covering skin, full length pants, long sleeved overalls, with close fittings at openings. Footwear resistant to caustics, and avoiding dust penetration.
8.2.1.5: General safety and hygiene measure	Wear clean, dry personal protective equipment. Barrier cream can be used if necessary. If heavily exposed daily, employees must shower, and if necessary use a barrier cream to protect exposed skin, particularly neck, face and wrists.
8.2.2: Environmental exposure controls	All ventilation systems should be filtered before discharge to atmosphere.
<b>9: Physical and chemical properties</b>	
<b>9.1: General information</b>	
9.1.1: Appearance	White or off white (beige) to grey for refractory solid material of varying sizes: Lump, granular or fine powder.
9.1.2: Odour	Slight earthy odour.

<b>9.2: Important health, safety and environmental information</b>	
Remark	Calcium magnesium oxide reacts exothermically with water to form Calcium hydroxide: $\text{CaO.MgO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 + \text{MgO} + 1155 \text{ kJ/kg CaO}$
pH	11-12 with 0,3 g/l at 18°C / 12,4 in saturated $\text{Ca(OH)}_2$ lye at 20°C
Solubility in water	Between 16 mg/l to 1250 mg/l at 18°C
<b>9.3: Other information</b>	
Melting point	2800 °C / 345°C to 540°C (in CaO, MgO and H <sub>2</sub> O)
Boiling point	3600 °C at 10000 hPa
Specific gravity	3,3 – 3,6 g/cm <sup>3</sup> at 20°C
Bulk density	700 – 3200 kg/m <sup>3</sup> at 20°C
Vapour pressure	Non volatile
Partition coefficient	Not applicable
Flash point	Not applicable
Flammability	Not flammable
Explosive properties	Not flammable
<b>10: Stability and reactivity</b>	Minimise exposure to air and moisture to avoid degradation.
<b>10.1: Conditions to avoid</b>	When heated up over 540°C Calcium magnesium hydroxide degrades in calcium oxide, magnesium oxide and aqua: $\text{CaMg(OH)}_4 \rightarrow \text{CaO} + \text{MgO} + \text{H}_2\text{O}$
<b>10.2: Materials to avoid</b>	Calcium magnesium oxide reacts exothermically with acids to form calcium and magnesium salts. Calcium magnesium oxide reacts with aluminium and brass in the presence of moisture leading to the production of hydrogen: $\text{CaO.MgO} + 2 \text{Al} + 7 \text{H}_2\text{O} \rightarrow \text{MgO} + \text{Ca(Al(OH)}_4)_2 + 3 \text{H}_2$ Calcium magnesium hydroxide reacts with carbon dioxide to form Calcium magnesium carbonate: $\text{CaMg(OH)}_4 + 2 \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{MgCO}_3 + \text{H}_2\text{O}$ Calcium magnesium hydroxide reacts with acids to form Calcium magnesium salts. Calcium magnesium hydroxide reacts with aluminium and brass in the presence of moisture under formation (or release) of hydrogen gas: $\text{CaMg(OH)}_4 + 2 \text{Al} + 6 \text{H}_2\text{O} \rightarrow \text{Ca(Al(OH)}_4)_2 + \text{Mg(OH)}_2 + 3\text{H}_2$
<b>10.3: Additional remarks</b>	Calcium magnesium oxide absorbs moisture and carbon dioxide from air to form calcium magnesium carbonate (dolomite), which is a common material in the nature.
<b>11: Toxicological information</b>	
<b>11.1: Acute effect</b>	
Eye contact	Risk of serious damage to eyes.
Inhalation	Inhalation of dust causes discomfort to the upper respiratory tract. Irritant to the respiratory tract in high concentration of dust.
Ingestion	Calcium oxide is not toxic. Large amounts may cause irritation to the gastrointestinal tract.
Skin contact	Irritating to skin in the presence of moisture.
<b>11.2: Long term exposure</b>	
Eye contact	Risk of serious damage to eyes.
Inhalation	Prolonged and repeated inhalation of dust may affect the respiratory tract.
Skin contact	In case of prolonged skin contact, product may cause serious damage to skin in combination with moisture.

<b>12: Ecological information</b>	
<b>12.1: Ecotoxicity</b>	
12.1.1: Acute/Prolonged toxicity to fish	No known toxic effects.
12.1.2: Acute/Prolonged toxicity to aquatic invertebrates	No known toxic effects.
12.1.3: Acute/Prolonged toxicity to aquatic plants	No known toxic effects.
12.1.4: Toxicity to micro-organisms e.g. bacteria	At high concentration, through the rise of temperature and pH, calcium oxide is used for disinfection of sewage sludges.
12.1.5: Chronic toxicity to aquatic organisms	No data
12.1.6: Toxicity to soil dwelling organisms	No data.
12.1.7: Toxicity to terrestrial plants	No data, however calcium magnesium oxide / calcium magnesium hydroxide is used as a fertiliser.
12.1.8: General effect	Acute pH-effect. Although this product is useful to correct water acidity, an excess of more than 1 g/l may be harmful to aquatic life. pH-value of > 12 will rapidly decrease as result of dilution and carbonation.
<b>12.2: Mobility</b>	Calcium magnesium oxide reacts with water and/or carbon dioxide to form respectively calcium magnesium hydroxide and/or calcium magnesium carbonate, which are sparingly soluble, and so present a low mobility in most ground. Moreover those products are used as fertilisers. Refractory products are inert.
<b>12.3: Persistence and degradability</b>	Not relevant for inorganic substances.
<b>12.4: Bioaccumulative potential</b>	Not relevant for inorganic substances.
<b>13: Disposal considerations</b>	Disposal should be in accordance with local and national legislation.
<b>14: Transport information</b>	
<b>14.1: Transport consideration</b>	
14.1.1.: Classification	Not subject to identification
14.1.2: ADR (Road)	Not subject to identification
14.1.3: RID (Rail)	Not subject to identification
14.1.4: IMDG / GGVSea (Sea)	Not subject to identification
14.1.5:IATA-DGR / ICTAO-TI(Air)	Code UN 1910 – Class 8 – Group of packing III
<b>14.2: Special precaution</b>	Avoid any release of dust during transportation, by using tight tanks for powders and covered trucks for pebbles.
<b>15: Regulatory information</b>	
<b>15.1: Labelling according to EEC-directives</b>	
15.1.1: Symbol and classification of the substance	<b><u>Xi Irritant</u></b> 
15.1.2: Restriction of marketing and employment	None
15.1.3: National regulations	Water endangering class 1

<b>16: Other information</b>	
<b>16.1: Risk phrases</b>	<b>R37 Irritating to respiratory system</b> <b>R38 Irritating to skin</b> <b>R41 Risk of serious damage to eyes</b>
<b>16.2: Safety phrases</b>	S 2 Keep out of reach of children S 25 Avoid contact with eyes S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S 37 Wear suitable gloves S 39 Wear eye/face protection
<b>16.3: Further information</b>	This safety data sheet supplements the technical use instructions without replacing them. The information contained therein is based on the state of our knowledge regarding the product, at the mentioned date. They are provided in good faith. It does not exempt the user from knowing and applying all texts regulating his activity. It will be his sole responsibility to take all necessary precautions when using the product.
<b>16.4: Guidance and references</b>	Data sheet prepared in accordance with: Annex II of the REACH Regulation (EC) No. 1907/2006. References: 1. Council Directive 90/269/EEC 2. Booklet L64 - Safety Signs and Signals. The Health and Safety (Safety Signs and Signals) Regulations 1996 - Guidance on Regulations (HSE) - ISBN 0 7176 0870 0 3. IUCLID Dataset –2000 4. The Merck Index (Ed. Merck & Co, Rahway, USA).
<b>16.5: Revision</b>	The present version is a renewed version, in order to be in accordance with the Annex II of the REACH Regulation (EC) 1907/2006. Version November 2007
End of the safety data sheet	