



SAFETY DATA SHEET

Creation Date 11-Jul-2014

Revision Date 17-Oct-2016

Revision Number 8

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

1.1. Product identification

Product Description: Calcium oxide
Cat No. : 422830000; 422830010; 422830025
Synonyms Lime
CAS-No 1305-78-8
EC-No. 215-138-9
Molecular Formula Ca O
Reach Registration Number 01-2119475325-36

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

Recommended Use Laboratory chemicals.
Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category PC21 - Laboratory chemicals
Process categories PROC15 - Use as a laboratory reagent
Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Acros Organics BVBA
Janssen Pharmaceuticalaan 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

| | |
|--|-------------------|
| Skin Corrosion/irritation | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation | Category 1 (H318) |
| Specific target organ toxicity - (single exposure) | Category 3 (H335) |

Environmental hazards

Based on available data, the classification criteria are not met

2.2. Label elements

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Signal Word

Danger

Hazard Statements

- H315 - Causes skin irritation
- H318 - Causes serious eye damage
- H335 - May cause respiratory irritation

Precautionary Statements

- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/ physician

2.3. Other hazards

Water reactive

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

| Component | CAS-No | EC-No. | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|---------------|-----------|-------------------|----------|---|
| Calcium oxide | 1305-78-8 | EEC No. 215-138-9 | >95 | Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT SE 3 (H335) |

| | |
|---------------------------|------------------|
| Reach Registration Number | 01-2119475325-36 |
|---------------------------|------------------|

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. Immediate medical attention is required. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| Ingestion | Do not induce vomiting. Call a physician or Poison Control Center immediately. |
| Inhalation | Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| Protection of First-aiders | Ensure that medical personnel are aware of the material(s) involved, take precautions to |

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protect themselves and prevent spread of contamination.

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

Causes severe eye damage. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Extinguishing media which must not be used for safety reasons

Water.

5.2. Special hazards arising from the substance or mixture

Non-combustible. Water reactive.

Hazardous Combustion Products

None known.

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. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Do not expose spill to water. Sweep up or vacuum up spillage and collect in suitable container 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

Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. Handle under inert gas, protect from moisture.

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 before re-use. Wash hands before

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breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Protect from moisture. Store under an inert atmosphere.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

| Component | European Union | The United Kingdom | France | Belgium | Spain |
|---------------|---|--|---|--|---|
| Calcium oxide | | STEL: 6 mg/m ³ 15 min TWA: 2 mg/m ³ 8 hr | TWA / VME: 2 mg/m ³ (8 heures). | TWA: 2 mg/m ³ 8 uren | TWA / VLA-ED: 2 mg/m ³ (8 horas) |
| Component | Italy | Germany | Portugal | The Netherlands | Finland |
| Calcium oxide | | TWA: 1 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 1 mg/m ³ (8 Stunden). MAK Höhepunkt: 2 mg/m ³ | TWA: 2 mg/m ³ 8 horas | | TWA: 2 mg/m ³ 8 tunteina |
| Component | Austria | Denmark | Switzerland | Poland | Norway |
| Calcium oxide | MAK-KZW: 4 mg/m ³ 15 Minuten MAK-TMW: 2 mg/m ³ 8 Stunden | TWA: 2 mg/m ³ 8 timer | STEL: 2 mg/m ³ 15 Minuten TWA: 2 mg/m ³ 8 Stunden | STEL: 6 mg/m ³ 15 minutach STEL: 4 mg/m ³ 15 minutach TWA: 2 mg/m ³ 8 godzinach TWA: 1 mg/m ³ 8 godzinach | Ceiling: 2 mg/m ³ |
| Component | Bulgaria | Croatia | Ireland | Cyprus | Czech Republic |
| Calcium oxide | TWA: 5.0 mg/m ³ | TWA-GVI: 2 mg/m ³ 8 satima. | TWA: 2 mg/m ³ 8 hr. STEL: 6 mg/m ³ 15 min | | TWA: 2 mg/m ³ 8 hodinách. Ceiling: 4 mg/m ³ |
| Component | Estonia | Gibraltar | Greece | Hungary | Iceland |
| Calcium oxide | TWA: 2 mg/m ³ 8 tundides. STEL: 5 mg/m ³ 15 minutites. | | TWA: 5 mg/m ³ | STEL: 5 mg/m ³ 15 percekben. CK TWA: 5 mg/m ³ 8 órában. AK | TWA: 2 mg/m ³ 8 klukkustundum. Ceiling: 4 mg/m ³ |
| Component | Latvia | Lithuania | Luxembourg | Malta | Romania |
| Calcium oxide | TWA: 5 mg/m ³ | TWA: 2 mg/m ³ IPRD STEL: 5 mg/m ³ | | | TWA: 2 mg/m ³ 8 ore STEL: 5 mg/m ³ 15 minute |
| Component | Russia | Slovak Republic | Slovenia | Sweden | Turkey |
| Calcium oxide | Skin notation MAC: 1 mg/m ³ | TWA: 5 mg/m ³ total aerosol | TWA: 5 mg/m ³ 8 urah inhalable fraction STEL: 5 mg/m ³ 15 minutah inhalable fraction | STV: 2.5 mg/m ³ 15 minuter inhalable dust LLV: 1 mg/m ³ 8 timmar. inhalable dust | |

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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

| <u>Route of exposure</u> | <u>Acute effects (local)</u> | <u>Acute effects (systemic)</u> | <u>Chronic effects (local)</u> | <u>Chronic effects (systemic)</u> |
|------------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Oral Dermal Inhalation | | | | |

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)
Hand Protection Protective gloves

| <u>Glove material</u> | <u>Breakthrough time</u> | <u>Glove thickness</u> | <u>EU standard</u> | <u>Glove comments</u> |
|---|-----------------------------------|------------------------|--------------------|-----------------------|
| Natural rubber Nitrile rubber Neoprene PVC | See manufacturers recommendations | - | EN 374 | (minimum requirement) |

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

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

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: Particulates filter conforming to EN 143

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

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Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|---|--------------------------|--|
| Appearance | Beige | |
| Physical State | Powder Solid | |
| Odor | Odorless | |
| Odor Threshold | No data available | |
| pH | 12.5 | |
| Melting Point/Range | 2570 °C / 4658 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 2850 °C / 5162 °F | @ 760 mmHg |
| Flash Point | No information available | Method - No information available |
| Evaporation Rate | Not applicable | Solid |
| Flammability (solid,gas) | No information available | |
| Explosion Limits | No data available | |
| Vapor Pressure | No data available | |
| Vapor Density | Not applicable | Solid |
| Specific Gravity / Density | No data available | |
| Bulk Density | No data available | |
| Water Solubility | Reacts with water | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Autoignition Temperature | | |
| Decomposition Temperature | No data available | |
| Viscosity | Not applicable | Solid |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |

9.2. Other information

| | |
|-------------------|-------|
| Molecular Formula | Ca O |
| Molecular Weight | 56.08 |

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Moisture sensitive. Air sensitive.

10.3. Possibility of hazardous reactions

| | |
|--------------------------|--|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | No information available. |

10.4. Conditions to avoid

Avoid dust formation. Exposure to air. Incompatible products. Exposure to moist air or water.

10.5. Incompatible materials

Acids. Strong oxidizing agents. Halogens. Fluorine. Hydrogen fluoride. Carbon dioxide (CO₂). Alcohols. Water.

10.6. Hazardous decomposition products

None known.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|--------------------------|-------------|-----------------|
| Calcium oxide | >2000 mg/kg (female Rat) | | |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Category 3

Results / Target organs

Respiratory system.

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

No information available.

(j) aspiration hazard;

Not applicable

Solid

Symptoms / effects, both acute and delayed

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Do not empty into drains.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|---------------|---|------------|------------------|----------|
| Calcium oxide | LC50: = 1070 mg/L, 96h static (Cyprinus carpio) | | | |

12.2. Persistence and degradability

Persistence

Persistence is unlikely, based on information available.

Degradability

Not relevant for inorganic substances, Reacts with water.

Degradation in sewage treatment plant

Water reactive.

12.3. Bioaccumulative potential

Product does not bioaccumulate due to reaction with water

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12.4. Mobility in soil Reacts with water. Is not likely mobile in the environment.

12.5. Results of PBT and vPvB assessment Water reactive.

12.6. Other adverse effects
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
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 Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC) According to the European Waste Catalogue, 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. Do not empty into drains. Do not dispose of waste into sewer. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before discharge.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

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

ADR Not regulated

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

IATA

14.1. UN number UN1910
14.2. UN proper shipping name CALCIUM OXIDE
14.3. Transport hazard class(es) 8
14.4. Packing group III

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

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International Inventories

X = listed

| Component | EINECS | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL |
|---------------|-----------|--------|-----|------|-----|------|-------|------|-------|------|------|
| Calcium oxide | 215-138-9 | - | | X | X | - | X | X | X | X | X |

National Regulations

| Component | Germany - Water Classification (VwVwS) | Germany - TA-Luft Class |
|---------------|--|-------------------------|
| Calcium oxide | WGK 1 | |

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

Take note of Dir 94/33/EC on the protection of young people at work

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

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

H315 - Causes skin irritation

H318 - Causes serious eye damage

H335 - May cause respiratory irritation

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

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

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

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

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

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - Volatile Organic Compounds

Key literature references and sources for data

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.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

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11-Jul-2014

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17-Oct-2016

Revision Summary

Update to Format.

ACR42283

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This safety data sheet complies with the requirements of 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