SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance: Calcium carbide
Article number: 6667
Registration number (REACH): 01-2119494719-18-xxxx
Index No: 006-004-00-9
EC number: 200-848-3
CAS number: 75-20-7

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

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

1.4 Emergency telephone number

Emergency information service: Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

This mixture does not meet the criteria for classification.

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.12</td>
<td>substance and mixture which, in contact with water, emits flammable gas</td>
<td>(Water-react. 1)</td>
<td>H260</td>
</tr>
<tr>
<td>3.1O</td>
<td>acute toxicity (oral)</td>
<td>(Acute Tox. 5)</td>
<td>H303</td>
</tr>
<tr>
<td>3.1D</td>
<td>acute toxicity (dermal)</td>
<td>(Acute Tox. 5)</td>
<td>H313</td>
</tr>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>(Skin Irrit. 2)</td>
<td>H315</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>(Eye Dam. 1)</td>
<td>H318</td>
</tr>
</tbody>
</table>
2.2 Label elements
Labelling GHS

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pictograms

Hazard statements

- H260: In contact with water releases flammable gases which may ignite spontaneously
- H303+H313: May be harmful if swallowed or in contact with skin
- H315: Causes skin irritation
- H318: Causes serious eye damage

Precautionary statements

Precautionary statements - prevention

- P223: Do not allow contact with water.
- P231+P232: Handle under inert gas. Protect from moisture.
- P233: Keep container tightly closed.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P264: Wash ... thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - response

- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353: IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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/doctor.
- P312: Call a POISON CENTER/doctor if you feel unwell.
- P321: Specific treatment (see ... on this label).
- P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
- P362+P364: Take off contaminated clothing and wash it before reuse.
- P363: Wash contaminated clothing before reuse.
- P370+P378: In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.

Precautionary statements - storage

- P402+P404: Store in a dry place. Store in a closed container.
- P405: Store locked up.

Precautionary statements - disposal
For full text of Hazard- and EU Hazard-statements: see SECTION 16.
## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General notes**
Take off contaminated clothing.

**Following inhalation**
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

**Following skin contact**
Rinse skin with water/shower. In case of skin irritation, consult a physician.

**Following eye contact**
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**Following ingestion**
Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2 Most important symptoms and effects, both acute and delayed
Risk of blindness, Nausea, Risk of serious damage to eyes, Irritation, Vomiting

### 4.3 Indication of any immediate medical attention and special treatment needed
none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Co-ordinate fire-fighting measures to the fire surroundings dry extinguishing powder, carbon dioxide (CO2), dry sand

**Unsuitable extinguishing media**
water, foam

### 5.2 Special hazards arising from the substance or mixture
Non-combustible.

**Hazardous combustion products**
In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO2), May produce toxic fumes of carbon monoxide if burning. Acetylen

### 5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust. Avoid contact with skin, eyes and clothes.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
Covering of drains.

Advices on how to clean up a spill
Take up mechanically. Control of dust. Take up carefully when dry.

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provide adequate ventilation.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dry place. Keep only in the original container. Keep under inert gas.

Incompatible substances or mixtures
Observe hints for combined storage. Do not allow contact with water.

Consideration of other advice

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)
No information available.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZA</td>
<td>calcium oxide</td>
<td>1305-78-8</td>
<td>OEL (DME)</td>
<td>2</td>
<td></td>
<td>DME</td>
<td></td>
</tr>
<tr>
<td>ZA</td>
<td>calcium oxide</td>
<td>1305-78-8</td>
<td>OEL (DoL)</td>
<td>2</td>
<td></td>
<td>DoL-OEL</td>
<td></td>
</tr>
</tbody>
</table>

Notation
STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified
TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs/DMELs/PNECs and other threshold levels

• relevant DNELs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>DNEL</td>
<td>1 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>DNEL</td>
<td>4 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
</tbody>
</table>

• relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>PNEC</td>
<td>0.37 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>PNEC</td>
<td>0.24 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>PNEC</td>
<td>2.27 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>PNEC</td>
<td>817.4 mg/kg</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Individual protection measures (personal protective equipment)
Eye/face protection
Use safety goggles with side protection.

Skin protection
- *hand protection*
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
- *type of material*
  NBR (Nitrile rubber)
- *material thickness*
  0.4 mm
- *breakthrough times of the glove material*
  >480 minutes (permeation: level 6)
- *other protection measures*
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: solid
- Colour: dark grey
- Odour: like: garlic
- Odour threshold: No data available

Other physical and chemical parameters
- **pH (value)**: This information is not available.
- Melting point/freezing point: 2,160 °C
- Initial boiling point and boiling range: This information is not available.
- Flash point: not applicable
- Evaporation rate: no data available
- Flammability (solid, gas): Non-flammable

Explosive limits
- **lower explosion limit (LEL)**: 1.5 vol%
- **upper explosion limit (UEL)**: 95.4 vol%
- Explosion limits of dust clouds: these information are not available
- Vapour pressure: 0 hPa at 20 °C
There is no additional information.

Risk of ignition.
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Material reacts vigorously with water emitting flammable gases.

Violent reaction with: Bases, Methanol, Oxidisers, Acids

Keep away from heat. Protect from moisture.

copper, silver

Hazardous combustion products: see section 5.

Density
2.22 g/cm³ at 20 °C

Vapour density
This information is not available.

Relative density
Information on this property is not available.

Solubility(ies)

Water solubility
1,600 mg/l at 20 °C, Hydrolysis

Partition coefficient

n-octanol/water (log KOW)
0.37 (ECHA)

Auto-ignition temperature
Information on this property is not available.

Decomposition temperature
no data available

Viscosity
not relevant (solid matter)

Explosive properties
Shall not be classified as explosive

Oxidising properties
none

9.2 Other information
There is no additional information.

Particle size
7 - 20 mm

SECTION 10: Stability and reactivity

10.1 Reactivity
Risk of ignition.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Material reacts vigorously with water emitting flammable gases.

Violent reaction with: Bases, Methanol, Oxidisers, Acids

10.4 Conditions to avoid
Keep away from heat. Protect from moisture.

10.5 Incompatible materials
copper, silver

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.
Causes skin irritation.
Causes serious eye damage.
Shall not be classified as a respiratory or skin sensitiser.
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant
Shall not be classified as a specific target organ toxicant (single exposure).
Shall not be classified as a specific target organ toxicant (repeated exposure).
Shall not be classified as presenting an aspiration hazard.

Causes vomiting, nausea
Causes serious eye damage, risk of blindness

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>&gt;2,000 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
</tr>
<tr>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2,500 mg/kg</td>
<td>rabbit</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

• Acute toxicity estimate (ATE)
  oral  2,500 mg/kg
  dermal 2,500 mg/kg

• Acute toxicity of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>oral</td>
<td>2,500 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure
  Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure
  Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
  vomiting, nausea

• If in eyes
  Causes serious eye damage, risk of blindness

• If inhaled
  data are not available
Causes skin irritation

Other information
None

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Aquatic toxicity (acute) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>LC50</td>
<td>158 mg/l</td>
<td>aquatic invertebrates</td>
<td>96 h</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>ErC50</td>
<td>184.6 mg/l</td>
<td>algae</td>
<td>72 h</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)

Aquatic toxicity (chronic) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>LC50</td>
<td>53.1 mg/l</td>
<td>aquatic invertebrates</td>
<td>14 d</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>EC50</td>
<td>300.4 mg/l</td>
<td>microorganisms</td>
<td>3 h</td>
</tr>
</tbody>
</table>

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

\[ n\text{-octanol/water (log KOW)} = 0.37 \]

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.
SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information
Do not empty into drains.

Waste treatment of containers/packagings
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
1402

14.2 UN proper shipping name
CALCIUM CARBIDE

Hazardous ingredients
Calcium carbide

14.3 Transport hazard class(es)
Class 4.3 (substances which, in contact with water, emit flammable gases)

14.4 Packing group
I (substance presenting high danger)

14.5 Environmental hazards
none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

  UN number 1402
  Proper shipping name CALCIUM CARBIDE
  Particulars in the transport document UN1402, CALCIDIUM CARBIDE, 4.3, I, (B/E)
  Class 4.3
  Classification code W2
  Packing group I
  Danger label(s) 4.3
### International Maritime Dangerous Goods Code (IMDG)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>1402</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>CALCIUM CARBIDE</td>
</tr>
<tr>
<td>Particulars in the shipper's declaration</td>
<td>UN1402, CALCIUM CARBIDE, 4.3, I</td>
</tr>
<tr>
<td>Class</td>
<td>4.3</td>
</tr>
<tr>
<td>Packing group</td>
<td>I</td>
</tr>
<tr>
<td>Danger label(s)</td>
<td>4.3</td>
</tr>
</tbody>
</table>

### International Civil Aviation Organization (ICAO-IATA/DGR)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>1402</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Calcium carbide</td>
</tr>
<tr>
<td>Particulars in the shipper's declaration</td>
<td>UN1402, Calcium carbide, 4.3, I</td>
</tr>
<tr>
<td>Class</td>
<td>4.3</td>
</tr>
<tr>
<td>Packing group</td>
<td>I</td>
</tr>
<tr>
<td>Danger label(s)</td>
<td>4.3</td>
</tr>
</tbody>
</table>
SECTION 15: Regulatory information

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

National inventories
- EINECS/ELINCS/NLP (Europe)
- DSL/NDSL (Canada)
- Toxic Substance Control Act (TSCA)

15.2 Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DME</td>
<td>Department of Minerals and Energy: Mine Health and Safety Act, 1996 (Occupational Exposure Limits for Airborne Pollutants)</td>
</tr>
<tr>
<td>DMEL</td>
<td>Derived Minimal Effect Level</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>DoL-OEL</td>
<td>Department of Labour: Hazardous Chemical Substances Regulations, 1995 (Occupational Exposure Limits - Control Limits/Recommended Limits)</td>
</tr>
<tr>
<td>EC No</td>
<td>The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
<tr>
<td>Eye Dam.</td>
<td>seriously damaging to the eye</td>
</tr>
<tr>
<td>Eye Irrit.</td>
<td>irritant to the eye</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>Index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
</tbody>
</table>
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.