1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Calcium carbide
Product Number: 21039
Brand: Aldrich
Index-No.: 006-004-00-9
CAS-No.: 75-20-7

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103 USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin irritation (Category 2), H315
Serious eye damage (Category 1), H318
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H260: In contact with water releases flammable gases which may ignite spontaneously.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H401: Toxic to aquatic life.

Precautionary statement(s)
P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Handle under inert gas. Protect from moisture. 
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. 
Wash skin thoroughly after handling. 
Use only outdoors or in a well-ventilated area. 
Avoid release to the environment. 
Wear protective gloves/ protective clothing/ eye protection/ face protection. 
IF ON SKIN: Wash with plenty of soap and water. 
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 
Immediately call a POISON CENTER or doctor/ physician. 
Specific treatment (see supplemental first aid instructions on this label). 
Get medical advice/ attention. 
Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages. 
Take off contaminated clothing and wash before reuse. 
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. 
Store in a dry place. Store in a closed container. 
Store in a well-ventilated place. Keep container tightly closed. 
Store locked up. 
Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium carbide</td>
<td>Water-react. 1; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; Aquatic Acute 2; H260, H315, H318, H335, H401</td>
<td>90 - 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES
5.1 Extinguishing media
Suitable extinguishing media
Dry powder
5.2 Special hazards arising from the substance or mixture
Calcium oxide
5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.
5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.
6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition. No smoking. For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Store under inert gas. Moisture sensitive. Reacts violently with water. Handle and store under inert gas.
7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.
8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

**Eye/face protection**
- Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
- Gloves must be inspected prior to use. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- **Full contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: 480 min
  - Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

- **Splash contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: 480 min
  - Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Complete suit protecting against chemicals, Flame retardant protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
- Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Form: crystalline</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>12.48 at 20 g/l</td>
</tr>
<tr>
<td>Melting point/freezing</td>
<td>Melting point/range: 2,300 °C (4,172 °F)</td>
</tr>
<tr>
<td>point</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point</td>
<td>no data available</td>
</tr>
<tr>
<td>boiling range</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>no data available</td>
</tr>
</tbody>
</table>
h) Evaporation rate  no data available
i) Flammability (solid, gas) The product is not flammable. - Flammability (solids)
j) Upper/lower flammability or explosive limits  no data available
k) Vapour pressure  no data available
l) Vapour density  no data available
m) Relative density  2.22 g/mL at 25 °C (77 °F)
n) Water solubility  no data available
o) Partition coefficient: n-octanol/water  no data available
p) Auto-ignition temperature  390 °C (734 °F)
q) Decomposition temperature  no data available
r) Viscosity  no data available
s) Explosive properties  Not explosive
t) Oxidizing properties  no data available

9.2 Other safety information  no data available

10. STABILITY AND REACTIVITY
10.1 Reactivity  no data available
10.2 Chemical stability  Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions  Reacts violently with water.
10.4 Conditions to avoid  Exposure to moisture.
10.5 Incompatible materials  Strong oxidizing agents, Reacts violently with water.
10.6 Hazardous decomposition products  Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects

Acute toxicity  no data available
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation  no data available
Serious eye damage/eye irritation  no data available
Respiratory or skin sensitisation
Maximisation Test - guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: Not available
Cough, Shortness of breath, Headache, Nausea, Vomiting

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 50 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 4.62 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - 46 mg/l - 72 h
(OECD Test Guideline 201)

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT (US)</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number: 1402</td>
<td>Class: 4.3</td>
<td>Packing group: I</td>
</tr>
<tr>
<td>Proper shipping name: Calcium carbide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reportable Quantity (RQ): 10 lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine pollutant: No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poison Inhalation Hazard: No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN number: 1402</td>
<td>Class: 4.3</td>
<td>Packing group: I</td>
</tr>
<tr>
<td>Proper shipping name: CALCIUM CARBIDE</td>
<td>EMS-No: F-G, S-N</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant: No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN number: 1402</td>
<td>Class: 4.3</td>
<td>Packing group: I</td>
</tr>
<tr>
<td>Proper shipping name: Calcium carbide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IATA Passenger: Not permitted for transport</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Reactivity Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium carbide</td>
<td>75-20-7</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium carbide</td>
<td>75-20-7</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**New Jersey Right To Know Components**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium carbide</td>
<td>75-20-7</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute  Acute aquatic toxicity
Eye Dam.  Serious eye damage
H260  In contact with water releases flammable gases which may ignite spontaneously.
H315  Causes skin irritation.
H318  Causes serious eye damage.
H335  May cause respiratory irritation.
H401  Toxic to aquatic life.
Skin Irrit.  Skin irritation
STOT SE  Specific target organ toxicity - single exposure
Water-react.  Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating
Health hazard:  2
Chronic Health Hazard:  
Flammability:  3
Physical Hazard  1

NFPA Rating
Health hazard:  2
Fire Hazard:  3
Reactivity Hazard:  1
Special hazard.I:  W

Further information
Copyright 2014 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.6  Revision Date: 07/01/2014  Print Date: 09/28/2015