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

1.1 Product identifiers
   Product name: Copper(II) carbonate basic
   Product Number: 61167
   Brand: SIGALD
   REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
   CAS-No.: 12069-69-1

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 Inc.
   3050 SPRUCE ST
   ST. LOUIS MO 63103
   UNITED STATES
   Telephone: +1 314 771-5765
   Fax: +1 800 325-5052

1.4 Emergency telephone
   Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Acute toxicity, Oral (Category 4), H302
   Acute toxicity, Inhalation (Category 4), H332
   Eye irritation (Category 2), H319
   Short-term (acute) aquatic hazard (Category 1), H400
   Long-term (chronic) aquatic hazard (Category 1), H410

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

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Warning

Hazard statement(s)
H302 + H332 Harmful if swallowed or if inhaled.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms:
- Cupric carbonate basic

Molecular weight: 221,12 g/mol
CAS-No.: 12069-69-1
EC-No.: 235-113-6

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) hydroxide carbonate</td>
<td>Acute Tox. 4; Eye Irrit. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H332, H319, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 10</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Call an ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: immediately make victim drink water (two glasses at most). 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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Copper oxides
Not combustible. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Work under hood. Do not inhale substance/mixture. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Tightly closed. Dry.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

 Ingredients with workplace control parameters

8.2 Exposure controls

 Appropriate engineering controls
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

 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). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains.

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**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>9.1 Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
</tr>
<tr>
<td>b) Odor</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
</tr>
<tr>
<td>d) pH</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
</tr>
<tr>
<td>g) Flash point</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
</tr>
<tr>
<td>l) Vapor density</td>
</tr>
<tr>
<td>m) Relative density</td>
</tr>
</tbody>
</table>
The life science business of Merck operates as MilliporeSigma in the US and Canada

n) Water solubility 0,002 g/l at 20 °C - OECD Test Guideline 105 - slightly soluble
o) Partition coefficient: n-octanol/water Not applicable for inorganic substances
p) Autoignition temperature No data available
q) Decomposition temperature 200 °C -
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
no information available

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Copper oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 1.385 mg/kg (OECD Test Guideline 401)
Remarks: (in analogy to similar compounds) absorption
LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)
Remarks: (in analogy to similar products)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h (OECD Test Guideline 404)
Remarks: (in analogy to similar products)
**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: irritating
(OECD Test Guideline 405)
Remarks: (in analogy to similar products)

**Respiratory or skin sensitization**
Maximization Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

**Germ cell mutagenicity**
Ames test
Salmonella typhimurium
Result: negative
(in analogy to similar products)
OECD Test Guideline 474
Mouse - male and female - Bone marrow
Result: negative
(in analogy to similar products)
OECD Test Guideline 486
Rat - male - Liver cells
Result: negative
(in analogy to similar products)

**Carcinogenicity**
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

**Specific target organ toxicity - single exposure**
Acute oral toxicity - Vomiting, Diarrhea

**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**

**Additional Information**
RTECS: GL6910000

Cough, Difficulty in breathing, Gastrointestinal disturbance, Nausea, Vomiting, Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

After inhalation of dust:
Local irritation, Metal-fume fever after inhalation of large quantities.
After absorption of toxic quantities:
cardiavascular disorders, agitation, spasms, CNS disorders
Damage to:
Liver, Kidney
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.
SECTION 12: Ecological information

12.1 Toxicity

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

12.3 Bioaccumulative potential

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Biological effects:
Pesticidal effect. Fungicide
Further information on ecology
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
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<tbody>
<tr>
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14.2 UN proper shipping name

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<tr>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper(II) hydroxide carbonate)</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper(II) hydroxide carbonate)</td>
<td>Environmentally hazardous substance, solid, n.o.s. (copper(II) hydroxide carbonate)</td>
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14.3 Transport hazard class(es)

<table>
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</table>

14.4 Packaging group

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<tr>
<td>III</td>
<td>III</td>
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</table>

14.5 Environmental hazards

<table>
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<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
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</thead>
<tbody>
<tr>
<td>Marine pollutant: yes</td>
<td>Marine pollutant: yes</td>
<td>Marine pollutant: yes</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

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

H302 Harmful if swallowed.
H302 + H332 Harmful if swallowed or if inhaled.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Relevant changes since previous version

2. Hazards identification

Further information

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.

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