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

1.1 Product identifiers

Product name: Calcium acetate hydrate
Product Number: 21056
Brand: Sigma
CAS-No.: 114460-21-8

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

Identified uses: Laboratory chemicals, Synthesis 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

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula: C₄H₆CaO₄·xH₂O
Molecular weight: 158.17 g/mol
CAS-No.: 114460-21-8

Sigma - 21056
<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetic acid</td>
<td>Flam. Liq. 3; Skin Corr. 1A; Eye Dam. 1; H226, H314, H318</td>
<td>&gt;= 1 - &lt; 5 %</td>
</tr>
<tr>
<td></td>
<td>Concentration limits:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 - &lt; 25 %: Eye Irrit. 2, H319;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 - &lt; 25 %: Skin Irrit. 2, H315;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25 - &lt; 90 %: Skin Corr. 1B, H314;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;= 90 %: Skin Corr. 1A, H314; &gt;= 90 %:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 - &lt; 5 %: H226;</td>
<td></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
Consult a physician. Show this material 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
Continue rinsing eyes during transport to hospital. Flush eyes with water as a precaution.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 **Special hazards arising from the substance or mixture**
Carbon oxides  
Calcium oxide  
Not combustible.

5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 **Further information**
No data available

---

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust.  
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**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

**Advice on 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. **Advice on safe handling**  
Avoid formation of dust and aerosols.

**Advice on protection against fire and explosion**
Provide appropriate exhaust ventilation at places where dust is formed.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.  
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.  
Storage class (TRGS 510): 13: Non Combustible Solids

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetic acid</td>
<td>64-19-7</td>
<td>TWA</td>
<td>10 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm, 25 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST</td>
<td>15 ppm, 37 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>acetic acid</td>
<td>64-19-7</td>
<td>TWA</td>
<td>10 ppm, 25 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm, 37 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>10 ppm, 25 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm, 37 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>40 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

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
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. 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 EC 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**
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

---

**SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>a) Appearance</th>
<th>Form: powder, Powder with lumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Odor</td>
<td>weakly of acetic acid</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>7.0 - 8.0 at 25 °C (77 °F)</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>()No data available</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>The product is not flammable.</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
<td>low</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
m) Relative density 1.52 at 20 °C (68 °F)  
n) Water solubility soluble  
o) Partition coefficient: n-octanol/water Not applicable  
p) Autoignition temperature No data available  
q) Decomposition temperature No data available  
r) Viscosity No data available  
s) Explosive properties No data available  
t) Oxidizing properties No data available  

9.2 Other safety information  
Bulk density ca.400 kg/m3

SECTION 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  
No data available

10.4 Conditions to avoid  
Avoid moisture.

10.5 Incompatible materials  
No data available

10.6 Hazardous decomposition products  
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity  
Acute toxicity estimate Oral - 2,678 mg/kg  
(Calculation method)  
LD50 Oral - Rat - male and female - 2,700 mg/kg  
(OECD Test Guideline 401)  
Remarks:  
The value is given in analogy to the following substances: calcium diacetate  
LC50 Inhalation - Rat - male and female - 4 h - > 5.6 mg/l  
(OECD Test Guideline 403)  
Remarks:  
The value is given in analogy to the following substances: calcium diacetate
LD50 Dermal - Rabbit - female - > 27,247.2 mg/kg
(OECD Test Guideline 402)
Remarks:
The value is given in analogy to the following substances: fumaric acid
No data available

**Skin corrosion/irritation**
No data available

Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)
Remarks:
The value is given in analogy to the following substances: calcium diacetate

**Serious eye damage/eye irritation**
No data available

Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)
Remarks:
The value is given in analogy to the following substances: calcium diacetate

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**

No data available

Ames test
Salmonella typhimurium
Result: negative
Remarks:
The value is given in analogy to the following substances: calcium diacetate

**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.

NTP: No ingredient 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 on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available
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
11.2 Additional Information
Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity
No data available

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
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods

IATA
Not dangerous goods

Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

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

SARA 313 Components
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
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium acetate hydrate</td>
<td>114460-21-8</td>
<td></td>
</tr>
<tr>
<td>water</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Further information
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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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