The life science business of Merck operates as MilliporeSigma in
the US and Canada

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

1.1 Product identifiers
Product name: Carbon dioxide

Product Number: 295108
Brand: Aldrich
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.: 124-38-9

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 number
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
Gases under pressure (Liquefied gas), H280

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)
H280 Contains gas under pressure; may explode if heated.

Precautionary statement(s)
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide</td>
<td>Press. Gas Liquefied gas; H280</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
Consult a physician. Show this safety data sheet to the doctor in attendance.

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
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

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

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
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
Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Contents under pressure. Avoid heating above: 50°C

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
Components with workplace control parameters

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.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

- **Full contact**
  - Material: butyl-rubber
  - Minimum layer thickness: 0,3 mm
  - Break through time: 480 min
  - Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

- **Splash contact**
  - Material: Chloroprene
  - Minimum layer thickness: 0,6 mm
  - Break through time: 30 min
  - Material tested: Camapren® (KCL 722 / Aldrich Z677493, 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**
Impervious 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 respirator with multi-purpose combination (US) or type AXBEK (EN 14387) 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**
Do not let product enter drains.

### SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

- **a) Appearance**
  - Form: Liquefied gas
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Odour</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: -78,5 °C - lit.</td>
<td></td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>g) Flash point</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>k) Vapour pressure</td>
<td>57.249 hPa at 20 °C</td>
<td></td>
</tr>
<tr>
<td>l) Vapour density</td>
<td>1.52 - (Air = 1.0)</td>
<td></td>
</tr>
<tr>
<td>m) Relative density</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>p) Auto-ignition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>t) Oxidizing properties</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

**9.2 Other safety information**

Relative vapour density 1.52 - (Air = 1.0)

**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**
No data available

**10.5 Incompatible materials**
No data available
### 10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon 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

<table>
<thead>
<tr>
<th>Effect</th>
<th>Data Available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute toxicity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitisation</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - single exposure</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - repeated exposure</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Aspiration hazard</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Additional Information**
RTECS: FF6400000

Nausea, Dizziness, Headache, Low to medium concentrations of carbon dioxide can affect regulation of blood circulation, affect the acidity of body fluids, respiratory difficulties, At high concentrations: Breathing difficulties, Increased pulse rate, change in body acidity, Very high concentrations can cause: Unconsciousness, death
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### 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**
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**
No data available

### SECTION 13: Disposal considerations

13.1 **Waste treatment methods**

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company.

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

### SECTION 14: Transport information

14.1 **UN number**
ADR/RID: 1013
IMDG: 1013
IATA: 1013

14.2 **UN proper shipping name**
ADR/RID: CARBON DIOXIDE
IMDG: CARBON DIOXIDE
IATA: Carbon dioxide

14.3 **Transport hazard class(es)**
ADR/RID: 2.2
IMDG: 2.2
IATA: 2.2

14.4 **Packaging group**
ADR/RID: -
IMDG: -
IATA: -

14.5 **Environmental hazards**
ADR/RID: no
IMDG Marine pollutant: no
IATA: no

14.6 **Special precautions for user**
No data available

### SECTION 15: Regulatory information

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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.

H280 Contains gas under pressure; may explode if heated.

Further information
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