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

1.1 Product identifiers

Product name: Sulfur dioxide
Product Number: 295698
Brand: Aldrich
Index-No.: 016-011-00-9
CAS-No.: 7446-09-5

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

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Gases under pressure (Liquefied gas), H280
Acute toxicity, Inhalation (Category 3), H331
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

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)
H280  Contains gas under pressure; may explode if heated.
H314  Causes severe skin burns and eye damage.
H331  Toxic if inhaled.

Precautionary statement(s)
P260  Do not breathe gas.
P264  Wash skin thoroughly after handling.
P271  Use only outdoors or in a well-ventilated area.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310  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/ doctor.
P363  Wash contaminated clothing before reuse.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P405  Store locked up.
P410 + P403  Protect from sunlight. Store in a well-ventilated place.
P501  Dispose of contents/ container to an approved waste disposal plant.

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

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>Sulphur dioxide</td>
<td>Press. Gas Liquefied gas; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; H280, H331, H314, H318</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**
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

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

**In case of eye contact**
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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
Sulfur oxides
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. 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: Do not breathe gas. 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). Stop flow of gas, move leaking cylinder to open air if without risk.

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
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Keep away from combustible materials and sources of ignition.
Contents under pressure.

Storage class
Storage class (TRGS 510): 2A: Gases

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>Sulphur dioxide</td>
<td>7446-09-5</td>
<td>STEL</td>
<td>0.25 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Not classifiable as a human carcinogen</td>
</tr>
</tbody>
</table>

Aldrich - 295698
<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>USA, NIOSH Recommended Exposure Limits</th>
<th>ST</th>
<th>USA, NIOSH Recommended Exposure Limits</th>
<th>TWA</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</th>
<th>PEL</th>
<th>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</th>
<th>STEL</th>
<th>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 ppm</td>
<td></td>
<td>5 ppm</td>
<td></td>
<td>13 mg/m³</td>
<td></td>
<td>2 ppm</td>
<td></td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 mg/m³</td>
<td></td>
<td>13 mg/m³</td>
<td></td>
<td></td>
<td>13 mg/m³</td>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Appropriate engineering controls**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face 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). Tightly fitting safety goggles

**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: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Butoject® (KCL 898)

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: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Butoject® (KCL 898)

**Body Protection**

protective clothing
**Respiratory protection**
required when vapours/mists 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.

### SECTION 9: Physical and chemical properties

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

- **a)** Appearance  
  Form: Liquefied gas
- **b)** Odor  
  No data available
- **c)** Odor Threshold  
  No data available
- **d)** pH  
  No data available
- **e)** Melting point/freezing point  
  Melting point/range: -73 °C (-99 °F) - lit.
- **f)** Initial boiling point and boiling range  
  -10 °C 14 °F - lit.
- **g)** Flash point  
  (No data available
- **h)** Evaporation rate  
  No data available
- **i)** Flammability (solid, gas)  
  The product is not flammable.
- **j)** Upper/lower flammability or explosive limits  
  No data available
- **k)** Vapor pressure  
  2,371.80 hPa at 21 °C (70 °F)
- **l)** Vapor density  
  2.21 - (Air = 1.0)
- **m)** Density  
  1.25 g/cm³ at 25 °C (77 °F) - lit.
  Relative density  
  No data available
- **n)** Water solubility  
  No data available
- **o)** Partition coefficient: n-octanol/water  
  Not applicable for inorganic substances
- **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  
  none
9.2 Other safety information

Relative vapor density 2.21 - (Air = 1.0)

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
Risk of explosion with:
Fluorine
Hydrides
Risk of ignition or formation of inflammable gases or vapours with:
Acetyldene
Peroxides
Azides
Chlorates
Carbides
Exothermic reaction with:
Acetylene
Acrolein
Amines
Ammonia
Halogen-halogen compounds
Butadiene
Chlorine
Organic nitro compounds
Ethylene oxide
Potassium
Sodium
Strong oxidizing agents
Nitrogen dioxide
Zinc diethyl

10.4 Conditions to avoid
No information available

10.5 Incompatible materials
Various metals

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**
Oral: No data available
Acute toxicity estimate Inhalation - 4 h - 701 ppm - gas

(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Dermal: No data available

**Skin corrosion/irritation**
Remarks: Causes skin burns.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Serious eye damage/eye irritation**
Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**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

**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

RTECS: WS4550000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., bronchoconstriction, pulmonary edema
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence
SECTION 12: Ecological information

12.1 Toxicity
No data available

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

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 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Pressurised gas bottle: dispose of only in empty condition!

SECTION 14: Transport information

DOT (US)
UN number: 1079   Class: 2.3 (8)
Proper shipping name: Sulfur dioxide
Reportable Quantity (RQ):
Poison Inhalation Hazard: Hazard Zone C

IMDG
UN number: 1079   Class: 2.3 (8)
Proper shipping name: SULPHUR DIOXIDE
EMS-No: F-C, S-U

IATA
UN number: 1079   Class: 2.3 (8)
Proper shipping name: Sulphur dioxide
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

SECTION 15: Regulatory information

SARA 302 Components
Sulphur dioxide  CAS-No.  Revision Date
7446-09-5  2008-11-03

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
Sudden Release of Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Sulphur dioxide  CAS-No.  Revision Date
7446-09-5  2008-11-03

Pennsylvania Right To Know Components
Sulphur dioxide  CAS-No.  Revision Date
7446-09-5  2008-11-03

California Prop. 65 Components
, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.Sulphur dioxide

CAS-No.  Revision Date
7446-09-5  2011-09-02

SECTION 16: Other information

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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Version: 6.9  Revision Date: 05/25/2023  Print Date: 12/16/2023

Aldrich - 295698
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.