1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Carbon disulfide
Product Number: 335266
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Harmful by ingestion., Irritant, Teratogen, Reproductive hazard

Target Organs
Eyes, Nerves., Liver, Kidney, Heart, Cardiovascular system., Male reproductive system., Female reproductive system.

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Reproductive toxicity (Category 2)
Specific target organ toxicity - repeated exposure, Inhalation (Category 1)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H361: Suspected of damaging fertility or the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
H402: Harmful to aquatic life.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P281 Use personal protective equipment as required.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.

HMIS Classification
- Health hazard: 2
- Chronic Health Hazard: *
- Flammability: 3
- Physical hazards: 0

NFPA Rating
- Health hazard: 2
- Fire: 3
- Reactivity Hazard: 0

Potential Health Effects
- Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
- Skin: Harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes eye irritation.
- Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: CS₂
Molecular Weight: 76.14 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon disulphide</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>75-15-0</td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-843-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>006-003-00-3</td>
</tr>
</tbody>
</table>

4. 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. Take victim immediately to hospital. 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
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical
Flash back possible over considerable distance. Container explosion may occur under fire conditions. Vapours may form explosive mixture with air. May explode when heated.
Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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.

Methods and materials for containment and cleaning up
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).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Refrigerate before opening.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon disulphide</td>
<td>75-15-0</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
Peripheral Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>TWA</td>
<td></td>
<td>31 mg/m3</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
</tbody>
</table>

Skin contact does contribute to exposure. Not classifiable as a human carcinogen

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>4 ppm</td>
<td>12 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
</tbody>
</table>

Skin notation

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>STEL</td>
<td>12 ppm</td>
<td>36 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
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</tbody>
</table>

Skin notation

<p>| | | | | |</p>
<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>20 ppm</td>
<td></td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z2</td>
<td></td>
</tr>
</tbody>
</table>

Z37.3-1968
<table>
<thead>
<tr>
<th></th>
<th>CEIL</th>
<th>30 ppm</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Z37.3-1968</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peak</td>
<td>100 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z2</td>
</tr>
<tr>
<td></td>
<td>Z37.3-1968</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td>3 mg/m3 USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td>ST</td>
<td>10 ppm</td>
<td>30 mg/m3 USA. NIOSH Recommended Exposure Limits</td>
</tr>
</tbody>
</table>

**Potential for dermal absorption**

**Personal protective equipment**

**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).

**Hand 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.

**Immersion protection**

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: > 480 min
Material tested: Vitoject® (Aldrich Z677698, Size M)

**Splash protection**

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: > 30 min
Material tested: Vitoject® (Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

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

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form liquid
Colour colourless

Safety data
pH no data available
Melting point/range: -112 - -111 °C (-170 - -168 °F)
Boiling point 46 °C (115 °F)
Flash point -30 °C (-22 °F) - closed cup
Ignition temperature 100 °C (212 °F)
Autoignition temperature no data available
Lower explosion limit 1.3 % (V)
Upper explosion limit 50 % (V)
Vapour pressure 394.956 hPa (296.241 mmHg) at 20 °C (68 °F)
1,342.711 hPa (1,007.116 mmHg) at 55 °C (131 °F)
Density 1.266 g/mL at 25 °C (77 °F)
Water solubility no data available
Partition coefficient: n-octanol/water log Pow: 2.16
Relative vapour density 2.63 - (Air = 1.0)
Odour Stench.
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Alkali metals, Zinc, Amines, Azides, Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral - rat - 1,200 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 2 h - 25 mg/l
Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Genotoxicity in vivo - Human
Sister chromatid exchange

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.
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
May cause reproductive disorders.

Teratogenicity
Suspected human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
Inhalation - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Signs and Symptoms of Exposure
May cause convulsions.

Synergistic effects
no data available

Additional Information
RTECS: FF6650000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish  LC50 - other fish - 162 mg/l - 96 h  
Toxicity to algae  Growth inhibition EC50 - Chlorella pyrenoidosa - 21 mg/l - 96 h

**Persistence and degradability**  
no data available

**Bioaccumulative potential**  
no data available

**Mobility in soil**  
no data available

**PBT and vPvB assessment**  
no data available

**Other adverse effects**  
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life.  
no data available

### 13. DISPOSAL CONSIDERATIONS

**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

**DOT (US)**  
UN number: 1131  
Class: 3 (6.1)  
Packing group: I  
Proper shipping name: Carbon disulfide  
Reportable Quantity (RQ): 100 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**  
UN number: 1131  
Class: 3 (6.1)  
Packing group: I  
EMS-No: F-E, S-D  
Proper shipping name: CARBON DISULPHIDE  
Marine pollutant: No

**IATA**  
UN number: 1131  
Class: 3 (6.1)  
Proper shipping name: Carbon disulphide  
IATA Passenger: Not permitted for transport  
IATA Cargo: Not permitted for transport

### 15. REGULATORY INFORMATION

**OSHA Hazards**  
Flammable liquid, Target Organ Effect, Harmful by ingestion., Irritant, Teratogen, Reproductive hazard

**SARA 302 Components**  
The following components are subject to reporting levels established by SARA Title III, Section 302:  
<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
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<tbody>
<tr>
<td>Carbon disulphide</td>
<td>75-15-0</td>
<td>2007-07-01</td>
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**SARA 313 Components**  
The following components are subject to reporting levels established by SARA Title III, Section 313:  
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<tbody>
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<td>75-15-0</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>
SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
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<tbody>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.</td>
<td>75-15-0</td>
<td>2008-06-17</td>
</tr>
<tr>
<td>Carbon disulphide</td>
<td></td>
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</tbody>
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16. OTHER INFORMATION

Further information
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