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

1.1 Product identifiers

Product name: Acetone

Product Number: 650501
Brand: SIGALD
Index-No.: 606-001-00-8
REACH No.: 01-2119471330-49-XXXX
CAS-No.: 67-64-1

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
Flammable liquids (Category 2), H225
Eye irritation (Category 2), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

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: Danger
Hazard statement(s)
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use non-sparking tools.
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 information (EU)
EUH066 Repeated exposure may cause skin dryness or cracking.

Reduced Labeling (<= 125 ml)
Pictogram

Signal word
Hazard statement(s) none
Precautionary statement(s) none

Supplemental Hazard information (EU)
EUH066 Repeated exposure may cause skin dryness or cracking.

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
Formula : C₃H₆O
Molecular weight : 58.08 g/mol
CAS-No. : 67-64-1
EC-No. : 200-662-2
Index-No. : 606-001-00-8

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>67-64-1</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-662-2</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>606-001-00-8</td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336</td>
<td>&lt;= 100 %</td>
<td></td>
</tr>
</tbody>
</table>

Concentration limits:
>= 20 %: STOT SE 3, H336;

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. 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 in 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
Carbon dioxide (CO2) Foam Dry powder

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

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

5.4 Further information
Remove container from danger zone and cool with water. 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 vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. 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. Risk of explosion.

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 with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.

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
Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. 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 away from heat and sources of ignition.

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

Predicted No Effect Concentration (PNEC)

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil</td>
<td>33,3 mg/kg</td>
</tr>
<tr>
<td>Sea water</td>
<td>1,06 mg/l</td>
</tr>
<tr>
<td>Fresh water</td>
<td>10,6 mg/l</td>
</tr>
<tr>
<td>Sea sediment</td>
<td>3,04 mg/kg</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>30,4 mg/kg</td>
</tr>
<tr>
<td>Onsite sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

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: 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: Latex gloves
Minimum layer thickness: 0,6 mm
Break through time: 10 min
Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
required when vapours/aerosols 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.
Recommended Filter type: Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
a) Appearance
   Form: clear, liquid
   Color: colorless
b) Odor
   pungent, weakly aromatic
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>c) Odor Threshold</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td>d) pH</td>
<td>5 - 6 at 395 g/l at 20 °C</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: -94 °C</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>56 °C at 1.013 hPa</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>-17.0 °C - closed cup</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>Upper explosion limit: 13 %.V Lower explosion limit: 2 %.V</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
<td>245.3 hPa at 20.0 °C</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>soluble, in all proportions</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>p) Autoignition temperature</td>
<td>465.0 °C</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>Distillable in an undecomposed state at normal pressure.</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>Viscosity, kinematic: No data available Viscosity, dynamic: No data available</td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>t) Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 9.2 Other safety information

- Conductivity: 0.01 µS/cm at 20 °C
- Surface tension: 23.2 mN/m at 20.0 °C

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
Vapors may form explosive mixture with air.

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

#### 10.3 Possibility of hazardous reactions
Risk of ignition or formation of inflammable gases or vapours with:
- chromosulfuric acid
- chromyl chloride
- ethanolamine
Fluorine
Strong oxidizing agents
strong reducing agents
Nitric acid
chromium(VI) oxide
Risk of explosion with:
nonmetallic oxyhalides
halogen-halogen compounds
Chloroform
nitrating acid
nitrosyl compounds
hydrogen peroxide
halogen oxides
organic nitro compounds
peroxi compounds
Exothermic reaction with:
Bromine
Alkali metals
alkali hydroxides
Halogenated hydrocarbon
Sulfur dichloride
phosphorous oxichloride

10.4 **Conditions to avoid**
Warming.

10.5 **Incompatible materials**
rubber, various plastics

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**
LD50 Oral - Rat - female - 5.800 mg/kg
Remarks:
(ECHA)
LC50 Inhalation - Rat - 4 h - 76 mg/l
Remarks:
Unconsciousness
Drowsiness
Dizziness
(External MSDS)
LD50 Dermal - Rabbit - 20.000 mg/kg
Remarks:
(IUCLID)

**Skin corrosion/irritation**
Skin - Rabbit
Result: Mild skin irritation - 24 h
(Draize Test)
Remarks:
**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Eye irritation - 24 h (Draize Test)
Remarks: (RTECS)

**Respiratory or skin sensitization**
Maximization Test - Guinea pig
Result: Not a skin sensitizer.
Remarks: (ECHA)

Chronic exposure may cause dermatitis.

**Germ cell mutagenicity**
Mutagenicity (mammal cell test): chromosome aberration.
Chinese hamster ovary cells
Result: negative
Ames test
Salmonella typhimurium
Result: negative
In vitro mammalian cell gene mutation test
Mouse lymphoma test
Result: negative

**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**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause drowsiness or dizziness. - Narcotic effects

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

RTECS: AL3150000

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

After absorption:

- Headache
- Salivation
- Nausea
- Vomiting
- Dizziness
- narcosis
- Coma
Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Kidney - Irregularities - Based on Human Evidence
Skin - Dermatitis - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
- flow-through test LC50 - Pimephales promelas (fathead minnow) - 6.210 mg/l - 96 h
  (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
- static test LC50 - Daphnia pulex (Water flea) - 8.800 mg/l - 48 h
  Remarks: (ECHA)

Toxicity to algae
- static test NOEC - M.aeruginosa - 530 mg/l - 8 d
  (DIN 38412)
  Remarks: (maximum permissible toxic concentration) (IUCLID)

Toxicity to bacteria
- static test EC50 - activated sludge - 61,15 mg/l - 30 min
  (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability
- aerobic - Exposure time 28 d
  Result: 91 % - Readily biodegradable.
  (OECD Test Guideline 301B)

Biochemical Oxygen Demand (BOD) 1.850 mg/g
  Remarks: (IUCLID)

Chemical Oxygen Demand (COD) 2.070 mg/g
  Remarks: (IUCLID)

Theoretical oxygen demand 2.200 mg/g
  Remarks: (Lit.)

12.3 Bioaccumulative potential

Does not bioaccumulate.

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

Additional ecological No data available
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
ADR/RID: 1090  IMDG: 1090  IATA: 1090

14.2 UN proper shipping name
ADR/RID: ACETONE  IMDG: ACETONE  IATA: Acetone

14.3 Transport hazard class(es)
ADR/RID: 3  IMDG: 3  IATA: 3

14.4 Packaging group
ADR/RID: II  IMDG: II  IATA: II

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

National legislation

: FLAMMABLE LIQUIDS

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

15.2 Chemical Safety Assessment
A Chemical Safety Assessment has been carried out for this substance.
SECTION 16: Other information

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

EUH066 Repeated exposure may cause skin dryness or cracking.
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

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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