SAFETY DATA SHEET

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

1.1 Product identifiers

Product name : Acetyl chloride

Product Number : 00990
Brand : Sigma-Aldrich
Index-No. : 607-011-00-5
CAS-No. : 75-36-5

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)

- Flammable liquids (Category 2), H225
- Skin corrosion (Category 1B), H314
- Serious eye damage (Category 1), H318
- Short-term (acute) aquatic hazard (Category 3), H402

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)
H225  Highly flammable liquid and vapor.
H314  Causes severe skin burns and eye damage.
H402  Harmful to aquatic life.

Precautionary statement(s)
P210  Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233  Keep container tightly closed.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242  Use only non-sparking tools.
P243  Take precautionary measures against static discharge.
P264  Wash skin thoroughly after handling.
P273  Avoid release to the environment.
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.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235  Store in a well-ventilated place. Keep cool.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazard not otherwise classified (HNOC) or not covered by GHS
Lachrymator.
Reacts violently with water.

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>Acetyl chloride</td>
<td>Flam. Liq. 2; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 3; H225, H314, H318, H402</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula</th>
<th>C₂H₃ClO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>78.50 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>75-36-5</td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-865-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>607-011-00-5</td>
</tr>
</tbody>
</table>
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. Call in physician.

**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**
Carbon dioxide (CO2) Dry powder

**Unsuitable extinguishing media**
Foam Water

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Hydrogen chloride gas
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
May not get in touch with: Water
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
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
Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. Remove container from danger zone and cool with water. 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 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
Keep workplace dry. Do not allow product to come into contact with water.

Advice on protection against fire and explosion
Flash back possible over considerable distance. 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
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
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep away from water. Never allow product to get in contact with water during storage. Hydrolyzes readily. Handle and store under inert gas.

Storage class
Storage class (TRGS 510): 3: Flammable liquids
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
Contains no substances with occupational exposure limit values.

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: Viton®
  Minimum layer thickness: 0.7 mm
  Break through time: 480 min
  Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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: Nitrile rubber
  Minimum layer thickness: 0.4 mm
  Break through time: 30 min
  Material tested: Camatril® (KCL 730 / Aldrich Z677442, 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.

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: liquid, clear
   Color: colorless

b) Odor
   Stinging

c) Odor Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: -112 °C (-170 °F) - lit.

f) Initial boiling point and boiling range
   52 °C 126 °F - lit.

g) Flash point
   5 °C (41 °F) - c.c.

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   Upper explosion limit: 19 %(V)
   Lower explosion limit: 7.3 %(V)

k) Vapor pressure
   805.764 hPa at 20 °C (68 °F)

l) Vapor density
   2.70

m) Density
   1.104 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
   No data available

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 2.70

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapors may form explosive mixture with air.

Sigma-Aldrich - 00990
Reacts violently with water.

10.2 **Chemical stability**
Sensitive to moisture

10.3 **Possibility of hazardous reactions**
Exothermic reaction with:
- Alkaline earth metals
- Alcohols
- Alkali metals
- Strong oxidizing agents
- Alkalis
- Nonmetallic halides
A risk of explosion and/or of toxic gas formation exists with the following substances:
- Water
- Dimethyl sulfoxide
- Potassium
- Sodium
- Amides

10.4 **Conditions to avoid**
- Warming.
- Moisture.

10.5 **Incompatible materials**
Metals

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

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**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**
- Oral: No data available
- Inhalation: No data available
- Dermal: No data available

**Skin corrosion/irritation**
- Skin - Rabbit
  - Result: Causes burns.
  - Remarks: (IUCLID)

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

**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: AO6390000
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., 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**
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. 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

**DOT (US)**
- UN number: 1717
- Class: 3 (8)
- Packing group: II
- Proper shipping name: Acetyl chloride
- Reportable Quantity (RQ): 5000 lbs
- Poison Inhalation Hazard: No

**IMDG**
- UN number: 1717
- Class: 3 (8)
- Packing group: II
- Proper shipping name: ACETYL CHLORIDE

**IATA**
- UN number: 1717
- Class: 3 (8)
- Packing group: II
- Proper shipping name: Acetyl chloride

SECTION 15: Regulatory information

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**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**
Fire Hazard, Acute Health Hazard

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

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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