

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifiers**

Product name : Pivaloyl chloride

Product Number : 80910

Brand : Fluka

CAS-No. : 3282-30-2

**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 Company Ltd.  
The Old Brickyard  
NEW ROAD, GILLINGHAM  
Dorset  
SP8 4XT  
UNITED KINGDOM

Telephone : +44 (0)1747 833000

Fax : +44 (0)1747 833313

E-mail address : eurtechserv@sial.com

**1.4 Emergency telephone number**

Emergency Phone # : +44 (0)1747 833100

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Flammable liquids (Category 2)

Acute toxicity, Inhalation (Category 2)

Acute toxicity, Oral (Category 4)

Skin corrosion (Category 1B)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Highly flammable. Reacts violently with water. Harmful if swallowed. Causes burns. Very toxic by inhalation.

**2.2 Label elements****Labelling according Regulation (EC) No 1272/2008 [CLP]**

Pictogram



Signal word

Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.

H302

Harmful if swallowed.

H314

Causes severe skin burns and eye damage.

H330

Fatal if inhaled.

Precautionary statement(s)

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P284 Wear respiratory protection.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard information (EU)  
EUH014 Reacts violently with water.

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)



R-phrases(s)

R11 Highly flammable.  
R14 Reacts violently with water.  
R22 Harmful if swallowed.  
R34 Causes burns.  
R26 Very toxic by inhalation.

S-phrases(s)

S16 Keep away from sources of ignition - No smoking.  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**2.3 Other hazards**

Lachrymator.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Synonyms : Trimethylacetyl chloride  
Formula : C<sub>5</sub>H<sub>9</sub>ClO  
Molecular Weight : 120.58 g/mol

Component		Concentration
<b>Pivaloyl chloride</b>		
CAS-No.	3282-30-2	-
EC-No.	221-921-6	

**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**

Take off contaminated clothing and shoes immediately. 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.

**4.2 Most important symptoms and effects, both acute and delayed**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

**4.3 Indication of any immediate medical attention and special treatment needed**

no data available

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**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Dry powder

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, Hydrogen chloride gas

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

no data available

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. 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.

**6.2 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.

**6.3 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). Do not flush with water.

**6.4 Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. 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.

Never allow product to get in contact with water during storage.

Store under inert gas.

**7.3 Specific end uses**

no data available

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### 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.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (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).

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: clear, liquid Colour: colourless
b) Odour	unpleasant
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	Melting point/range: -56 °C
f) Initial boiling point and boiling range	105 - 106 °C - lit.
g) Flash point	19 °C - closed cup
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 7.4 %(V) Lower explosion limit: 1.9 %(V)
k) Vapour pressure	40 hPa at 20 °C
l) Vapour density	4.16 - (Air = 1.0)
m) Relative density	0.979 g/mL at 25 °C
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	log Pow: 1.8

- |    |                           |                   |
|----|---------------------------|-------------------|
| 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      | no data available |

## **9.2 Other safety information**

no data available

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## **10. STABILITY AND REACTIVITY**

### **10.1 Reactivity**

no data available

### **10.2 Chemical stability**

no data available

### **10.3 Possibility of hazardous reactions**

Reacts violently with water.

### **10.4 Conditions to avoid**

Do not allow water to enter container because of violent reaction.  
Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

### **10.5 Incompatible materials**

Alcohols, Oxidizing agents, Strong bases

### **10.6 Hazardous decomposition products**

Other decomposition products - no data available

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## **11. TOXICOLOGICAL INFORMATION**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - rat - 920 mg/kg

LC50 Inhalation - rat - 1 h - 500 mg/m<sup>3</sup>

LD50 Dermal - rat - 3,000 mg/kg

#### **Skin corrosion/irritation**

Skin - rabbit - Severe skin irritation

#### **Serious eye damage/eye irritation**

Eyes - rabbit - Severe eye irritation

#### **Respiratory or skin sensitization**

no data available

#### **Germ cell mutagenicity**

no data available

#### **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.

#### **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

**Potential health effects****Inhalation**

May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion**

Harmful if swallowed. Causes burns.

**Skin**

May be harmful if absorbed through skin. Causes skin burns.

**Eyes**

Causes eye burns.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - > 300 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 320 mg/l - 24 h

Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 75 mg/l - 96 h

**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**

no data available

**12.6 Other adverse effects**

Harmful to aquatic life.

no data available

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****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.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****14.1 UN number**

ADR/RID: 2438

IMDG: 2438

IATA: 2438

**14.2 UN proper shipping name**

ADR/RID: TRIMETHYLACETYL CHLORIDE

IMDG: TRIMETHYLACETYL CHLORIDE

IATA: Trimethylacetyl chloride

Passenger Aircraft: Not permitted for transport

Cargo Aircraft: Not permitted for transport

Special Provisions: "Keep away from heat" label required.

**14.3 Transport hazard class(es)**

ADR/RID: 6.1 (3, 8)

IMDG: 6.1 (3, 8)

IATA: 6.1 (3, 8)

**14.4 Packaging group**

ADR/RID: I

IMDG: I

IATA: -

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

no data available

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**15. REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

no data available

**15.2 Chemical Safety Assessment**

no data available

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**16. OTHER INFORMATION**

**Further information**

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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](http://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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