

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 7.4

Revision Date 27.10.2023

Print Date 03.05.2025

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : 4-Chlorobutyryl chloride

Product Number : C30604

Brand : Aldrich

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 4635-59-0

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Corrosive to Metals (Category 1), H290  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 2), H330  
Skin corrosion (Sub-category 1A), H314  
Serious eye damage (Category 1), H318  
Short-term (acute) aquatic hazard (Category 1), H400

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)            |                                                                                                                                  |
| H290                           | May be corrosive to metals.                                                                                                      |
| H302                           | Harmful if swallowed.                                                                                                            |
| H314                           | Causes severe skin burns and eye damage.                                                                                         |
| H330                           | Fatal if inhaled.                                                                                                                |
| H400                           | Very toxic to aquatic life.                                                                                                      |
| Precautionary statement(s)     |                                                                                                                                  |
| P273                           | Avoid release to the environment.                                                                                                |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P301 + P312                    | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.                                                                   |
| P303 + P361 + P353             | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P304 + P340 + P310             | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.             |
| 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 Statements | none                                                                                                                             |

### Reduced Labeling (<= 125 ml)

#### Pictogram

|                            |                                                                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                | Danger                                                                                                                           |
| Hazard statement(s)        |                                                                                                                                  |
| H330                       | Fatal if inhaled.                                                                                                                |
| H314                       | Causes severe skin burns and eye damage.                                                                                         |
| Precautionary statement(s) |                                                                                                                                  |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P303 + P361 + P353         | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P304 + P340 + P310         | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.             |
| 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 Statements | none |
|--------------------------------|------|

### 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.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Lachrymator.

### SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>4</sub>H<sub>6</sub>Cl<sub>2</sub>O  
Molecular weight : 141,00 g/mol  
CAS-No. : 4635-59-0  
EC-No. : 225-059-1

| Component                            | Classification | Concentration                                                                                                                                                          |
|--------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4-chlorobutyric acid chloride</b> |                |                                                                                                                                                                        |
| CAS-No.                              | 4635-59-0      | Met. Corr. 1; Acute Tox. 4;<br>Acute Tox. 2; Skin Corr.<br>1A; Eye Dam. 1; Aquatic<br>Acute 1; H290, H302,<br>H330, H314, H318, H400<br>M-Factor - Aquatic Acute:<br>1 |
| EC-No.                               | 225-059-1      |                                                                                                                                                                        |
|                                      |                | <= 100 %                                                                                                                                                               |

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**

Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

Foam Water

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

Carbon oxides

Hydrogen chloride gas

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

**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**

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.

## **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 carefully 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**

Work under hood. Do not inhale substance/mixture. 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**

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**

No metal containers.

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Moisture sensitive.

### **Storage class**

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

## **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**

## **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). 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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**

protective clothing

### **Respiratory protection**

Recommended Filter type: Filter A-(P3)

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.

---

## **SECTION 9: Physical and chemical properties**

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

- |                                            |                                  |
|--------------------------------------------|----------------------------------|
| a) Physical state                          | liquid                           |
| b) Color                                   | light pink                       |
| c) Odor                                    | stinging                         |
| d) Melting point/freezing point            | Melting point: -49 °C            |
| e) Initial boiling point and boiling range | 173 - 174 °C - lit.              |
| f) Flammability (solid, gas)               | No data available                |
| g) Upper/lower                             | Upper explosion limit: 11,7 %(V) |

|                                           |                                                                                                              |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| flammability or explosive limits          | Lower explosion limit: 5,5 %(V)                                                                              |
| h) Flash point                            | 85 °C - DIN 51758                                                                                            |
| i) Autoignition temperature               | No data available                                                                                            |
| j) Decomposition temperature              | > 120 °C                                                                                                     |
| k) pH                                     | acidic                                                                                                       |
| l) Viscosity                              | Viscosity, kinematic: No data available<br>Viscosity, dynamic: 1,82 mPa.s at 20 °C - OECD Test Guideline 114 |
| m) Water solubility                       | at 20 °C (rigorous decomposition)                                                                            |
| n) Partition coefficient: n-octanol/water | No data available                                                                                            |
| o) Vapor pressure                         | 1,31 hPa at 20 °C - OECD Test Guideline 104<br>8,88 hPa at 50 °C - OECD Test Guideline 104                   |
| p) Density                                | 1,26 g/cm <sup>3</sup> at 25 °C - lit.                                                                       |
| Relative density                          | No data available                                                                                            |
| q) Relative vapor density                 | No data available                                                                                            |
| r) Particle characteristics               | No data available                                                                                            |
| s) Explosive properties                   | No data available                                                                                            |
| t) Oxidizing properties                   | none                                                                                                         |

## 9.2 Other safety information

No data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Water  
alkalines  
Alcohols  
Amines  
Peroxides

#### 10.4 Conditions to avoid

Strong heating.

#### 10.5 Incompatible materials

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

LD50 Oral - Rat - female - 1.210 mg/kg

Remarks: (ECHA)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

LC50 Inhalation - Rat - male and female - 4 h - 0,65 - 0,87 mg/l - vapor

(OECD Test Guideline 403)

Symptoms: burns of mucous membranes, Cough, Shortness of breath, After a latency period:, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract

Dermal: No data available

##### Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive

Remarks: (ECHA)

##### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Corrosive

Remarks: (ECHA)

Remarks: Causes serious eye damage.

##### Respiratory or skin sensitization

No data available

##### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

##### Carcinogenicity

No data available

**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****Endocrine disrupting properties****Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - inhalation (vapor) - 28 d

Remarks: Subacute toxicity

RTECS: EM1406000

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

Decomposition of the substance with tissue moisture.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

---

**SECTION 12: Ecological information****12.1 Toxicity**

|                                                     |                                                                                                                                                                                           |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | static test LC50 - Leuciscus idus (Golden orfe) - 68,12 mg/l - 96 h (DIN 38412 T15)                                                                                                       |
|                                                     | static test NOEC - Leuciscus idus (Golden orfe) - 46,4 mg/l - 96 h (DIN 38412 T15)                                                                                                        |
| Toxicity to daphnia and other aquatic invertebrates | semi-static test EC50 - Daphnia magna (Water flea) - 0,492 mg/l - 48 h (OECD Test Guideline 202)<br>Remarks: The value is given in analogy to the following substances: Hydrochloric Acid |
| Toxicity to algae                                   | static test ErC50 - Pseudokirchneriella subcapitata (green algae) -                                                                                                                       |

0,492 mg/l - 72 h  
(OECD Test Guideline 201)  
Remarks: The value is given in analogy to the following substances:  
Hydrochloric Acid

Toxicity to bacteria      static test EC20 - activated sludge - > 1.000 mg/l - 30 min  
(OECD Test Guideline 209)

#### **12.2 Persistence and degradability**

Biodegradability      aerobic - Exposure time 14 d  
Result: > 90 % - Readily biodegradable.  
(OECD Test Guideline 301A)

#### **12.3 Bioaccumulative potential**

No data available

#### **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 Endocrine disrupting properties**

##### **Product:**

Assessment      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### **12.7 Other adverse effects**

Stability in water

Remarks: Hydrolyzes on contact with water.

---

### **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods**

No data available

---

### **SECTION 14: Transport information**

#### **14.1 UN number**

ADR/RID: 2922

IMDG: 2922

IATA: 2922

#### 14.2 UN proper shipping name

ADR/RID: CORROSIVE LIQUID, TOXIC, N.O.S. (4-chlorobutyric acid chloride) (4-chlorobutyric acid chloride)  
IMDG: CORROSIVE LIQUID, TOXIC, N.O.S. (4-chlorobutyric acid chloride) (4-chlorobutyric acid chloride)  
IATA: Corrosive liquid, toxic, n.o.s. (4-chlorobutyric acid chloride) (4-chlorobutyric acid chloride)

#### 14.3 Transport hazard class(es)

ADR/RID: 8 (6.1)                      IMDG: 8 (6.1)                      IATA: 8 (6.1)

#### 14.4 Packaging group

ADR/RID: I                              IMDG: I                              IATA: I

#### 14.5 Environmental hazards

ADR/RID: no                              IMDG Marine pollutant: no                      IATA: no

#### 14.6 Special precautions for user

Tunnel restriction code              : (C/D)  
Further information                    : 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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

H2              ACUTE TOXIC

E1              ENVIRONMENTAL HAZARDS

##### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

---

### SECTION 16: Other information

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

|      |                                          |
|------|------------------------------------------|
| H290 | May be corrosive to metals.              |
| H302 | Harmful if swallowed.                    |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage.               |

H330 May be corrosive to metals.  
H400 Harmful if swallowed.

### **Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### **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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

CHEMIKART