

# SAFETY DATA SHEET

Version 6.7  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Hydrochloric acid

Product Number : 258148

Brand : SIGALD

### 1.2 Other means of identification

No data available

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

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

### 1.4 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Pty. Ltd.  
Suite 1, Level 1, Building B  
11 Talavera Road  
MACQUARIE PARK NSW 2113  
AUSTRALIA

Telephone : +61 1800 800 097

### 1.5 Emergency telephone

Emergency Phone # : Free call (24/7): 1800 448 465  
Int'l (24/7): +61 2 9037 2994  
(CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 GHS Classification

Corrosive to Metals (Category 1), H290

Skin corrosion/irritation (Category 1), H314

Serious eye damage/eye irritation (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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)

H290

May be corrosive to metals.

H314

Causes severe skin burns and eye damage.

H335

May cause respiratory irritation.

## Precautionary statement(s)

### Prevention

P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response

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.
P390	Absorb spillage to prevent material damage.

### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Other hazards - none

## SECTION 3: Composition/information on ingredients

Substance / Mixture : Mixture

### 3.2 Mixtures

Formula : HCl  
Molecular weight : 36.46 g/mol

#### Hazardous ingredients

Component		Classification	Concentration
<b>hydrochloric acid</b>			
CAS-No.	7647-01-0	Met. Corr. 1; 1B; 1; STOT SE 3; H290, H314, H318, H335	≥ 30 - < 50 %
EC-No.	231-595-7	Concentration limits: ≥ 0.1 %: Met. Corr. 1, H290; ≥ 25 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; ≥ 10 %: STOT SE 3, H335;	
Index-No.	017-002-01-X		

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 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

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

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

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

Hydrogen chloride gas

Not combustible.

Ambient fire may liberate hazardous vapours.

### 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

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**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. 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 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.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

For precautions see section 2.2.

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

No metal containers.

Tightly closed.

Metal containers must be lined. Corrodes metal

**Storage class**

Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.3 no other specific uses are stipulated.

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
hydrochloric acid	7647-01-0	PEL (short term)	5 ppm 7.5 mg/m <sup>3</sup>	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

**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

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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 69 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, 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 EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer 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.

### Body Protection

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.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                   |                                     |
|-------------------|-------------------------------------|
| a) Appearance     | Form: liquid<br>Color: light yellow |
| b) Odor           | pungent                             |
| c) Odor Threshold | No data available                   |

d) pH	< 1
e) Melting point/freezing point	Solidification / Setting point: -30 °C
f) Initial boiling point and boiling range	> 100 °C - lit.
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	227 hPa at 21.1 °C 547 hPa at 37.7 °C 190 hPa at 20 °C
l) Vapor density	No data available
m) Density	1.2 g/cm <sup>3</sup> at 25 °C - lit.
Relative density	No data available
n) Water solubility	completely miscible at 20 °C soluble
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	Not applicable
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 2.3 mPa.s at 15 °C
s) Explosive properties	Not explosive
t) Oxidizing properties	The substance or mixture is not classified as oxidizing.

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Corrosive in contact with metals

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

Exothermic reaction with:

Amines

Aldehydes

permanganates, for example potassium permanganate

Risk of ignition or formation of inflammable gases or vapours with:

Aluminum

Carbides

Fluorine  
Metals  
Bases  
Sulfides  
Risk of explosion with:  
Alkali metals  
Sulphuric acid  
Gives off hydrogen by reaction with metals.

#### **10.4 Conditions to avoid**

no information available

#### **10.5 Incompatible materials**

MetalsMetals

#### **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**

##### **Mixture**

##### **Acute toxicity**

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

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Dermal: No data available

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

Mixture causes burns.

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

Mixture causes serious eye damage. Risk of blindness!

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

No data available

##### **Germ cell mutagenicity**

No data available

##### **Carcinogenicity**

No data available

##### **Reproductive toxicity**

No data available

##### **Specific target organ toxicity - single exposure**

Mixture may cause respiratory irritation.

##### **Specific target organ toxicity - repeated exposure**

No data available

##### **Aspiration hazard**

No data available

#### **11.2 Additional Information**

RTECS: MW4025000

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## Components

### hydrochloric acid

#### Acute toxicity

Oral: No data available

Inhalation: Cough Difficulty in breathing

Inhalation: absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

Dermal: No data available

#### Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Corrosive

(OECD Test Guideline 431)

#### Serious eye damage/eye irritation

Eyes - Bovine cornea

Result: Corrosive

(OECD Test Guideline 437)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: Conflicting results have been seen in different studies.

#### Carcinogenicity

Carcinogenicity - Did not show carcinogenic effects in animal experiments. (IUCLID)

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

May cause respiratory irritation.

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

#### Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### Aspiration hazard

No aspiration toxicity classification



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

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 Other adverse effects**

No data available

**Components****hydrochloric acid**

No data available

Toxicity to fish

LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h  
Remarks: (IUCLID)

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**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](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: 1789

IMDG: 1789

IATA-DGR: 1789

**14.2 UN proper shipping name**

ADR/RID: HYDROCHLORIC ACID

IMDG: HYDROCHLORIC ACID

IATA-DGR: Hydrochloric acid

**14.3 Transport hazard class(es)**

ADR/RID: 8

IMDG: 8

IATA-DGR: 8

**14.4 Packaging group**

ADR/RID: II

IMDG: II

IATA-DGR: II

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

#### 14.6 Special precautions for user

None

#### 14.7 Incompatible materials

MetalsMetals

#### Other regulations

Hazchem Code : 2R

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### SECTION 15: Regulatory information

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

##### Notification status

**DSL:** All components of this product are on the Canadian DSL

**ENCS:** On the inventory, or in compliance with the inventory

**ISHL:** On the inventory, or in compliance with the inventory

**KECI:** On the inventory, or in compliance with the inventory

**NZIoC:** Not in compliance with the inventory

**PICCS:** On the inventory, or in compliance with the inventory

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### SECTION 16: Other information

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

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

#### 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.

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