

# Safety Data Sheet

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name/designation:	Hydrochloric acid (For Steel Industry) analytical reagent
Product No.:	H0104
Synonymes:	none
CAS No.	7647-01-0

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

Relevant identified uses:	General chemical reagent
---------------------------	--------------------------

**1.3 Details of the supplier of the safety data sheet****Supplier****Avantor Performance Materials India Ltd.**

Street	501, 5th floor, Tiffany Building, Hiranandani Business Park,
Postal code/city	Thane, Maharashtra - 400607, India
Telephone	022-41288100

**Emergency phone number**

Telephone	1800105561
-----------	------------

**Preparation Information**

Product Information Compliance

**1.4 E-mail**

SDS@avantorsciences.com

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

#### Physical hazards

Substance or mixture corrosive to metals, category 1

#### health hazards

Skin corrosion, category 1B  
Specific target organ toxicity (single exposure), category 3, vascular

### 2.2 Label elements

#### Hazard pictograms



#### Signal word: Danger

May be corrosive to metals.  
Causes severe skin burns and eye damage.  
May cause respiratory irritation.

### 2.3 Other hazards none

## SECTION 3: Composition / information on ingredients

#### Substances

not applicable

#### Mixtures

##### Hazardous ingredients

Substance name	Identifier	Concentration	Hazard classes and hazard categories
Hydrochloric acid	CAS No.: 7647-01-0	30 - 40%	Skin Corr. 1B - H314 STOT SE 3 - H335

## SECTION 4: First aid measures

### 4.1 General information

IF exposed: Immediately call a POISON CENTRE/doctor. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

**After inhalation**

Immediately call a POISON CENTRE/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

**In case of skin contact**

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

**After eye contact**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

**In case of ingestion**

Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

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

no data available

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

no data available

no data available

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

**Extinguishing media which must not be used for safety reasons**

no restriction

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

In case of fire may be liberated:

Hydrogen chloride (HCl)

**5.3 Advice for firefighters**

DO NOT fight fire when fire reaches explosives.

Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

**5.4 Additional information**

Do not allow run-off from fire-fighting to enter drains or water courses.

Do not inhale explosion and combustion gases.

Use water spray jet to protect personnel and to cool endangered containers.

In case of fire: Evacuate area.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

**6.2 Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**6.3 Methods and material for containment and cleaning up**

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Soak up inert absorbent and dispose as waste requiring special attention.

**6.4 Additional information**

Clear spills immediately.

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

Avoid:

Inhalation

Avoid contact with eyes and skin.

Use extractor hood (laboratory).

If handled uncovered, arrangements with local exhaust ventilation have to be used.

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Protect from moisture.

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

Recommended storage temperature: Keep bottles tightly closed and away from sources of ignition and heat.

Keep container tightly closed and in a well-ventilated place.

**Specific end use(s)**

no data available

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

Does not contain substances above concentration limits fixing an occupational exposure limit.

**8.2 Exposure controls****Appropriate engineering controls**

no data available

**Personal protection equipment**

no data available

*Eye/face protection*

no data available

*Skin protection*

no data available

By short-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,12 mm
Breakthrough time (maximum wearing time):	> 480 min

By long-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,38 mm
Breakthrough time (maximum wearing time):	> 480 min

*Respiratory protection*

no data available

*Additional information*

no data available

*Environmental exposure controls*

no data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                      |                   |
|----------------------|-------------------|
| (a) Appearance       |                   |
| Physical state:      | liquid            |
| Colour:              | colourless        |
| (b) Odour:           | pungent           |
| (c) Odour threshold: | no data available |

### Safety relevant basic data

- |  |                                |
|--|--------------------------------|
| (d) pH:                                      | < 1 (20 °C)                    |
| (e) Melting point/freezing point:            | no data available              |
| (f) Initial boiling point and boiling range: | no data available              |
| (g) Flash point:                             | no data available              |
| (h) Evaporation rate:                        | no data available              |
| (i) Flammability (solid, gas):               | not applicable                 |
| (j) Flammability or explosive limits         |                                |
| Lower explosion limit:                       | no data available              |
| Upper explosion limit:                       | no data available              |
| (k) Vapour pressure:                         | 190 hPa (20 °C)                |
| (l) Vapour density:                          | no data available              |
| (m) Relative density:                        | 1.18 g/cm <sup>3</sup> (20 °C) |
| (n) Solubility(ies)                          |                                |
| Water solubility (g/L):                      | soluble (20°C)                 |
| Soluble (g/L) in Ethanol:                    | no data available              |
| (o) Partition coefficient: n-octanol/water:  | no data available              |
| (p) Auto-ignition temperature:               | no data available              |
| (q) Decomposition temperature:               | no data available              |
| (r) Viscosity                                |                                |
| Kinematic viscosity:                         | no data available              |
| Dynamic viscosity:                           | 2.3 mPa*s (15 °C)              |
| (s) Explosive properties:                    | not applicable                 |
| (t) Oxidising properties:                    | not applicable                 |

### 9.2 Other information

- |                        |                   |
|------------------------|-------------------|
| Bulk density:          | no data available |
| Refraction index:      | no data available |
| Dissociation constant: | no data available |
| Surface tension:       | no data available |
| Henry's Law Constant:  | no data available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Corrosive to metals

### 10.2 Chemical stability

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

**10.3 Possibility of hazardous reactions**

Explosive reaction with:

Alkali metals

Alkaline earth metal

Alkali (lye)

Violent reaction with:

light metals

Powdered metals

Exothermic reaction with:

Water

Substance, organic

**10.4 Conditions to avoid**

Humidity

**10.5 Incompatible materials**

Metal

**10.6 Hazardous decomposition products**

no data available

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute effects**

*Acute oral toxicity:*

no data available

*Acute dermal toxicity:*

Hydrochloric acid - LD50: > 5010 mg/kg - Rabbit - (Japan GHS Basis for Classification Data)

*Acute inhalation toxicity:*

Hydrochloric acid - LC50: 1.68 mg/l - Rat - (Japan GHS Basis for Classification Data)

**Irritant and corrosive effects**

*Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

May cause respiratory irritation.

**Respiratory or skin sensitisation**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

May cause respiratory irritation.

**STOT-repeated exposure**

not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****Carcinogenicity****Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

<b>SECTION 12: Ecological information</b>
---

**12.1 Ecotoxicity****Fish toxicity:**

no data available

**Daphnia toxicity:**

Hydrochloric acid - LC50: 250 mg/l (48 h) - Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.):12 p.

**Algae toxicity:**

no data available

**Bacteria toxicity:**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

Partition coefficient: n-octanol/water: no data available

**12.4 Mobility in soil:**

no data available

**12.5 Results of PBT/vPvB assessment**

no data available

**12.6 Other adverse effects**

no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

#### Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

### Land transport (ADR/RID)

14.1	UN-No.:	1789
14.2	Proper Shipping Name:	HYDROCHLORIC ACID
14.3	Class(es):	8
	Classification code:	C1
	Hazard label(s):	8
14.4	Packing group:	II
14.5	Environmental hazards:	No
14.6	Special precautions for user:	
	Hazard identification number (Kemler No.):	80
	tunnel restriction code:	E
		(Passage forbidden through tunnels of category E.)

### Sea transport (IMDG)

14.1	UN-No.:	1789
14.2	Proper Shipping Name:	HYDROCHLORIC ACID
14.3	Class(es):	8
	Classification code:	
	Hazard label(s):	8
14.4	Packing group:	II
14.5	Environmental hazards:	No
	Marine pollutant:	No
14.6	Special precautions for user:	
	Segregation group:	1
	EmS-No.	F-A S-B
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
	not relevant	

**Air transport (ICAO-TI / IATA-DGR)**

14.1	UN-No.:	1789
14.2	Proper Shipping Name:	HYDROCHLORIC ACID
14.3	Class(es):	8
	Classification code:	
	Hazard label(s):	8
14.4	Packing group:	II
14.5	Special precautions for user:	

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****SECTION 16: Other information****Abbreviations and acronyms**

ACGIH - American Conference of Governmental Industrial Hygienists  
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)  
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures  
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)  
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)  
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
ICAO-TI - International Civil Aviation Organization-Technical Instructions  
IMDG - International Maritime Code for Dangerous Goods  
LTV - Long Term Value  
NIOSH - National Institute for Occupational Safety and Health  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
vPvB - very Persistent, very Bioaccumulative

**Additional information**

Indication of changes: none

**Disclaimer**

The information provided in this Safety Data Sheet (SDS) was prepared based on data believed to be accurate as of the date of this SDS. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR PERFORMANCE MATERIALS ("AVANTOR") EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE INFORMATION CONTAINED HEREIN INCLUDING, WITHOUT LIMITATION, AS TO ACCURACY, COMPLETENESS, FITNESS FOR PURPOSE OR USE, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY AND STABILITY. This SDS is intended as a guide to the appropriate use, handling, storage and disposal of the product to which it relates by properly trained personnel, and is not intended to be comprehensive. Users of Avantor's products are advised to perform their own tests and to exercise their own judgment to determine the safety, suitability and appropriate use, handling, storage and disposal of each product and product combination for their own purposes and uses. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR DISCLAIMS LIABILITY FOR, AND BY USING AVANTOR'S PRODUCTS THE PURCHASER AGREES THAT UNDER NO CIRCUMSTANCES SHALL AVANTOR BE LIABLE FOR, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGE OF ANY TYPE OR KIND, INCLUDING WITHOUT LIMITATION, FOR LOSS OF PROFITS, REPUTATIONAL DAMAGE, PRODUCT RECALL OR BUSINESS INTERRUPTION.