CODE: 5100H

Hydrochloric Acid ACS

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 08/29/2016 Revision date: 17/10/2018 Supersedes: 17/10/2018 Version: 4.0

FCAT# 351285212

SECTION 1 : Identification

1.1. Product identifier

Product form	:	Substance
Trade name	:	Hydrochloric Acid ACS
Type of product	:	Solution
CAS No	:	7647-01-0
Product code	:	5100H
Formula	:	HCl

1.2. Recommended use and restrictions on use

Recommended uses and restrictions : Industrial uses: Uses of substances as such or in preparations* at industrial sites

1.3. Supplier

Regent Chemical Products Ltd.
600 Avenue Delmar
H9R 4A8 Pointe Claire
T 514-630-3309 - F 514-630-5951
info@regentchem.com - http://www.regentchem.com/

Distributed by:
fisher scientific
part of Thermo Fisher Scientific
112 Colonnade Road, Ottawa ON, K2E 7L6
1-800-234-7437

1.4. Emergency telephone number

Emergency number : Terrapure environmental: 1-800-567-7455(24/24)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-CA)

Corrosive to metals, Category 1	H290
Acute toxicity (oral), Category 4	H302
Acute toxicity (inhalation: dust, mist) Category 3	H331
Skin corrosion/irritation, Category 1A	H314
Serious eye damage/eye irritation, Category 1	H318

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :

GHS05 GHS06

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) : H290 - May be corrosive to metals
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H331 - Toxic if inhaled

Precautionary statements (GHS-CA) : P234 - Keep only in original container
P260 - Do not breathe mist/vapours/spray
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear gloves/protective clothing/eye protection/face protection
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
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
P304+P340 - IF INHALED: Remove person to fresh air and

keep comfortable for breathing
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
P311 - Call a POISON CENTER or doctor
P321 - Specific treatment (Treat symptomatically)
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P406 - Store in a corrosion resistant container with a resistant inner liner
P501 - Dispose of contents / container to a hazardous or special waste collection point in accordance with municipal, provincial and federal regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Chemical name/Synonyms	Product identifier	%wt/wt	Classification (GHS-CA)
hydrogen chloride, aqueous solution (Main constituent)	Hydrochloric acid, hydrogen chloride, muriatic acid	(CAS No) 7647-01-0	36-38	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation:dust,mist), H331 Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wash immediately with PE-glycol 400. Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre. Take the container/vomit to the doctor/hospital. Do not give chemical antidote. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after inhalation : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Respiratory difficulties. Possible laryngeal spasm/oedema. Corrosion of the upper respiratory tract. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of pneumonia. Risk of lung oedema.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Corrosion of the eye tissue. Permanent eye damage.

Symptoms/injuries after ingestion : Burns to the gastric/intestinal mucosa. Blood in vomit. Possible esophageal perforation. Shock.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.3. Specific hazards arising from the hazardous product

Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. If reacting: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water. Heat exposure: dilute toxic gas/vapour with water spray.

Methods for cleaning up : Liquid spill: neutralize with soda (sodium carbonate). Neutralized substance: take up in absorbent material. Scoop absorbed substance into closing containers. Damaged/cooled tanks must be emptied. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures : Remove contaminated clothes. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store in a dry place.

Incompatible products : Oxidizing agent.

Incompatible materials : Heat sources. combustible materials. Sources of ignition.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Storage temperature : 2 - 25 °C

Storage area : Ventilation at floor level. Keep locked up. Provide for a tub to collect spills. Meet the legal requirements.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. metals. amines.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. corrosion-proof. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : MATERIAL TO AVOID: steel. metal.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrochloric acid (7647-01-0)		
USA - ACGIH	ACGIH Ceiling (ppm)	2 ppm
USA - ACGIH	Remark (ACGIH)	URT irr
USA - OSHA	OSHA PEL (Ceiling) (mg/m³)	7 mg/m³
USA - OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment	:	EN 379 - eye protection.
Materials for protective clothing	:	GIVE GOOD RESISTANCE: natural rubber. nitrile rubber.
Hand protection	:	Gloves.
Eye protection	:	Face shield.
Skin and body protection	:	Corrosion-proof clothing.
Respiratory protection	:	Gas mask with filter type B. Gas mask with filter type E. High vapour/gas concentration: self-contained respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Molecular mass	:	36.46 g/mol
Colour	:	Colourless.
Odour	:	Irritating/pungent odour.
Odour threshold	:	5 ppm 7.5 mg/m³
pH	:	< 1
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	No data available
Freezing point	:	-30 °C
Boiling point	:	51 °C
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	150 - 160 mm Hg
Vapour pressure at 50 °C	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	1.2
Relative density of saturated gas/air mixture	:	No data available
Density	:	1190 kg/m³
Relative gas density	:	No data available
Solubility	:	Soluble in water. Water: Complete
Log Pow	:	0.25 (QSAR)
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	0.0023 Pa.s (15 °C)
Viscosity, kinematic (calculated value) (40 °C)	:	1.93277311 mm²/s
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available

9.2. Other information

Minimum ignition energy	:	Not applicable
VOC content	:	0 %
Other properties	:	Gas/vapour heavier than air at 20°C. Producing fumes/mist. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : Decomposes on exposure to temperature rise: release of (highly) toxic gases/vapours (chlorine). Reacts violently with (some) bases: release of heat. Reacts with (strong) oxidizers: release of (highly) toxic gases/vapours (chlorine). Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

Chemical stability : Stable under normal conditions.

Conditions to avoid : Avoid heat and direct sunlight

Incompatible materials : Highly reactive with water, strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with cyanides, sulfides, sulfites and formaldehyde. Explosion risk during reactions with metals (hydrogen release).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Hydrochloric acid (7647-01-0)	
LD50 oral rat	700mg/kg
LD50 dermal rabbit	> 5,010 mg/kg
LC50 inhalation rat	4.2 mg/l 3124 ppm (exposure time: 1 h)

Skin corrosion/irritation : Not classified
pH: < 1

Serious eye damage/irritation : Not classified
pH: < 1

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

IARC group : 3 - Not classifiable3 - Not classifiable

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Hydrochloric acid (7647-01-0)	
Viscosity, kinematic (calculated value) (40 °C)	1.93277311 mm²/s

SECTION 12: Ecological information

12.1. Toxicity

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Mild water pollutant (surface water). Ground water pollutant. Maximum concentration in drinking water: 250 mg/l (chloride) (Directive 98/83/EC). Slightly harmful to fishes. Toxic to plankton. pH shift.

Hydrochloric acid (7647-01-0)	
LC50 fish 1	282 mg/l (LC50; 96 h)
EC50 Daphnia 1	< 56 mg/l (EC50; 72 h)

12.2. Persistence and degradability

Hydrochloric acid (7647-01-0)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the components available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

Hydrochloric acid (7647-01-0)	
Log Pow	0.25 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Hydrochloric acid (7647-01-0)	
Log Pow	0.25 (QSAR)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Dehydrate/make insoluble. Immobilize the toxic or harmful components. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.

Additional information : Dispose of contents / container to a hazardous or special waste collection point in accordance with municipal, provincial and federal regulations.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : 1789

Packing group : II - Medium Danger

TDG Primary Hazard Classes : 8 - Class 8 - Corrosives

Transport document description : HYDROCHLORIC ACID, 1789, 8, II

Hazard labels (TDG) : 8 - Corrosive substances

Explosive Limit and Limited Quantity Index : 1 L

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 1 L

14.2. Transport information/DOT

DOT

UN-No.(DOT) : 1789

Packing group (DOT) : II - Medium Danger

Class (DOT) : 8 - Class 8 - Corrosive material

Transport document description : HYDROCHLORIC ACID, 1789, 8, II

Dangerous for the environment : No

Other information : No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1789

Transport document description : HYDROCHLORIC ACID, 1789, 8, II

Class (IMDG) : 8 - Corrosive substances

Packing group (IMDG) : II - substances presenting Medium Danger

IATA

UN-No. (IATA)	:	1789
Class (IATA)	:	8 - Corrosive substances
Packing group (IATA)	:	II - substances presenting Medium Danger
Transport document description	:	HYDROCHLORIC ACID, 1789, 8, II

14.3. SECTION 15: Regulatory information

15.1. National regulations

No additional information available

15.2. International regulations

Hydrochloric acid (7647-01-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

SDS Major/Minor	:	None
Date of issue	:	29/08/2016
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REGENT-GHS-SDS