

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, amended by 2015/830/EU

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the product

Product Description	Anhydrous Hydrogen Chloride
Synonym	Anhydrous hydrochloric acid, Chlorohydric acid, Hydrochloric acid gas, Hydrochloride, Muriatic acid
Pure Substance/preparation	Substance
CAS Number	7647-01-0
EC Number	231-595-7

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Manufacture of Substances, Laboratory chemicals
Uses advised against	No uses advised against has been identified

1.3 Details of the Supplier of the Safety Data Sheet

Gujrat Fluorochemicals Ltd.

12/A, GIDC Dahej Industrial Estate, Taluka-Vagra
Bharuch 392 130, Gujarat, India

Website	www.gfl.co.in
Telephone	+91-2641-618031(Admin)/618041-50(Purchase)/618086-87(Security)
Fax	+91-2641-618012
E-mail address	contact@gfl.co.in

1.4 Emergency Telephone Number

Emergency telephone number	+91-2641-618086-87 (Security)
----------------------------	-------------------------------

2. Hazard Identification

2.1 Classification of the substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Gases Under Pressure - Compressed Gas
Acute Oral Toxicity
Skin Corrosion/Irritation

Category 1 - H280
Category 3 - H331
Category 1A - H314

Pictogram



Signal Word

Danger

Hazard Statements

H280 Contain gas under pressure; may explode if heated

H331 Toxic if inhaled

H314 Causes severe skin burns and eye damage

Precautionary Statements

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapour spray.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/ face protection.

P264 Wash face, hands and skin thoroughly after handling.

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

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in comfortable position 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 CENTRE or doctor/physician.

Storage

P410+P403 Protect from sunlight. Store in a well-ventilated space.

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

P405 Store locked up.

Disposal

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

2.3 Other hazards

No information available.

3. Composition/information on Ingredients

3.1. Substance

Chemical name	CAS-No	EC No	Weight %	EU - GHS Substance Classification (REGULATION (EC) No 1272/2008)	REACH No.
Hydrogen Chloride (Press. Gas)	7647-01-0	231-595-7	<=100	Press. Gas Compr. Gas - H280 Acute Tox. 3 - H331 Skin Corr. 1A - H314 Eye Dam. 1 - H318	-

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

4. First aid measures

4.1 Description of first-aid measures

General advice	Immediate and specialized first aid and medical treatment is required. Speed is of the essence. Flush with plenty of water immediately. Continue flushing during transport to hospital or medical Centre.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin contact	Remove/Take off immediately all contaminated clothing including shoes. Rinse skin with water or shower. In case of reddened skin or burns seek medical advice.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Call a Physician or poison control center immediately.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Indication of immediate medical attention and special treatment needed

Treat symptomatically and supportively

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Water spray, Carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist can be used to cool the closed containers.
Unsuitable extinguishing media	No information available

5.2 Special hazards arising from the substance or mixture

Special Hazard

The product causes burn of eyes, skin and mucous membranes.

Thermal decomposition can lead to release of toxic and corrosive vapour/gases.

Hazardous Combustion Products

Hydrogen chloride gas

5.3 Advice for Firefighters

Product itself is not flammable or explosive. The product reacts with metals with evolution of highly flammable hydrogen gas. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. In enclosed areas: ventilate or wear a self-contained breathing apparatus. Remove all sources of ignition. Do not smoke. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental Precautions

Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if released in large quantities.

6.3 Methods and materials for containment and cleaning up

Collect leaking product in suited acid-proof containers. Stop the leakage by shutting valves, if this can be done safely. Immediately contact emergency personnel. Isolate affected area. Approach from upwind. Ventilate the premises. Eliminate all sources of ignition, and do not generate flames or sparks. Keep away materials and products which are incompatible with the product.

6.4 Reference to other sections

Hazardous combustion products: see section 10. Personal Protective equipment: See section 8. Incompatible materials: see section 8. Incompatible Material: see section 10. Disposal Consideration: see section 13

7. Handling and Storage

7.1 Precautions for Safe Handling

7.1.1 Handling

Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Avoid release to the environment. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

7.1.2 Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal

feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep away from open flames, hot surfaces and sources of ignition. Keep in a cool, well-ventilated place. Protect full containers from sources of heat to avoid over pressurization. Keep away from direct sunlight. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Store in accordance with local regulations. Store in a segregated and approved area. Keep in a hermetically sealed container in a ventilated, cool area. Keep away from heat sources. Keep away from reactive products Use containment dike around storage containers and transfer installation.

7.3 Specific end uses

Industrial chemicals, Manufacture of substances

8. Exposure Controls/ Personal Protection

8.1 Control Parameters

Exposure Limits Apply technical measures to comply with the occupational exposure

Component	European Union	The United Kingdom	France
Hydrochloric acid (CAS: 7647-01-0)	TWA: 5 ppm 8 hr TWA: 8 mg/m ³ 8 hr STEL: 10 ppm 15 min STEL: 15 mg/m ³ 15 min	STEL: 5 ppm 15 min STEL: 8 mg/m ³ 15 min TWA: 1 ppm 8 hr TWA: 2 mg/m ³ 8 hr	STEL / VLCT: 5 ppm. restrictive limit STEL / VLCT: 7.6 mg/m ³ . restrictive limit

Derived No Effect level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2 Exposure Controls

Appropriate Engineering Control Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimize release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye protection Tightly fitting safety goggles. 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.

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hand protection Inspect gloves before 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. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 480 minutes	0.20 mm	Level 6	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Neoprene	> 480 minutes	0.35 mm	EN 374	
Nitrile rubber	> 480 minutes	0.45 mm		
PVC	> 480 minutes	0.18 mm		
Viton (R)	> 480 minutes	0.30 mm		

(Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitization effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory protection

When workers are facing concentrations above the exposure limit, they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Acid gases filter Type E Yellow conforming to EN14387
Particulates filter conforming to EN 143.

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask: - Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141. When RPE is used a face piece Fit Test should be conducted.

Environmental exposure controls

Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Compressed Gas	
Physical state	Gas	
Odor	No data available	
Odor threshold	No data available	
Property	VALUES	Remarks/ Method
pH	No data available	
Melting point/freezing point	No data available	
Boiling Point/Range	-85 °C	
Flash Point	No data available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not applicable	
Flammability or explosive limits	No information available	
Lower Explosive Limit (LEL)	-	
Upper Explosive Limit (UEL)	-	
Relative Density	1.639 g/L at 20°C	
Vapor Density	No information available	
Vapor pressure (air = 1)	4620 kPa at 25°C	
Water solubility	500 g/L at 20°C	
Solubility in Other Solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	Non-flammable gas	

Preparation Date: 28-October-2021

Revision Date: 28-October-2021

Revision Number: 01

Decomposition temperature	No information available
Viscosity Kinematics	No information available
Viscosity Dynamics	1.7 mm ² /s (static) at 20°C
Oxidizing properties	non oxidizing
Explosive properties	non explosive
Molecular Formula	HCl
Molecular Weight	36.458 g/mol

9.2 OTHER INFORMATION

No information available

10. Stability and Reactivity

10.1 Reactivity

The product reacts with:

- common construction metals with evolution of highly flammable hydrogen gas,
- alkali and organic bases with violent evolution of heat,
- lime stone, marble, dolomite and other carbonic minerals with evolution of suffocating CO₂ gas,
- strong oxidants (bleaching agents, conc. H₂O₂, HNO₃, etc. and their salts, chromates, permanganates, etc) with evolution of toxic chlorine gas,
- sulphides with evolution of toxic H₂S gas,
- sulphites, hydrogen sulphites and pyro sulphites with evolution of toxic SO₂ gas,
- with sodium azide to highly toxic and explosive hydrazoic acid,
- any other chemical, that is prone to (dangerous) reaction/decomposition with acids.

10.2 Chemical stability

Stable under recommended storage and use conditions.

10.3 Possibility of hazardous reaction

Dangerous/dangerous reactions with: strong oxidiser, Aldehydes, Aluminium, Amines, Carbide, Fluorine, Metals, Permanganates, Strong alkali,

Danger of explosion: Alkali metals, Sulphuric acid, concentrated

10.4 Conditions to avoid

Incompatible products, Excess heat

10.5 Incompatible Materials

Strong oxidizing agents. Reducing Agent. Bases. Metals.

10.6 Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions. Hydrogen chloride gas

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute toxicity

Component Information

Preparation Date: 28-October-2021

Revision Date: 28-October-2021

Revision Number: 01

Chemical Name	LD50 - Oral	LD50 - Dermal	LC50 - Inhalation
Hydrochloric Acid Gas (CAS: 7647-01-0)	-	-	4701 ppm (30 min)

Source: ECHA

Local effect

Inhalation	Toxic if inhaled
Eye contact	Causes serious eye damage
Skin contact	Causes severe skin burns
Ingestion	No data available

Chronic toxicity

Skin Corrosion/Irritation	Causes severe skin burns
Eye damage/irritation	Causes serious eye damage
Sensitization	Based on available data, the classification criteria are not met
Mutagenic effects	Based on available data, the classification criteria are not met
Carcinogenic effects	Based on available data, the classification criteria are not met
Reproductive effects	Based on available data, the classification criteria are not met
STOT - Single Exposure	Based on available data, the classification criteria are not met
STOT - repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met

Other Hazard

No additional information available

12. Ecological Information

12.1 Ecotoxicity

Chemical Name	Toxicity to Fish	Toxicity to Daphnia and other aquatic invertebrate	Toxicity to Algae EC50
Hydrochloric acid gas (CAS: 7647-01-0)	Effect concentration: 20.5 mg/L	Effect concentration: 0.45 mg/L	0.73 mg/L

Source: ECHA

12.2 Persistence and Biodegradability

Persistence is unlikely, based on available information.

12.3 Bioaccumulative Potential

Bioaccumulation is unlikely.

12.4 Mobility in Soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB Assessment

No data available for assessment.

12.6 Other Adverse Effects

No additional information available

13. Disposal Considerations

13.1 Waste Treatment Methods

Waste from Residues / Unused Products	Disposal should be in accordance with applicable local/regional/national and international laws and regulations.
Contaminated packaging	Do not reuse empty containers. Dispose of contents/container to licensed hazardous or special waste collection point. Dispose of unused product.
Special Precautions	Dispose of this container to hazardous or special waste collection point. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport Information

IMDG/IMO

UN-No	UN 1050
Proper Shipping name	HYDROGEN CHLORIDE, ANHYDROUS
Hazard class	2.3 (8)
Environmental Hazard	No

IATA/ICAO

UN-No	UN 1050
Proper Shipping name	HYDROGEN CHLORIDE, ANHYDROUS
Hazard class	2.3 (8)
IATA Passenger	Not permitted for transport
IATA Cargo	Not permitted for transport

15. Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

International Inventories

TSCA	Complies
EINECS/ ELINCS	Complies
DSL/NDL	Complies
PICCS	Complies
ENCS	Complies
IECSC	Complies
AICS	Complies
KECL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other Information

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

H280 Contain gas under pressure; may explode if heated

H331 Toxic if inhaled

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

Preparation Date 28-October-2021

Revision Date 28-October-2021

Revision Note Not applicable

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

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

End of Safety Data Sheet