TATA CHEMICALS LIMITED

SAFETY DATA SHEET (SDS)

Name of chemical: Hydrochloric Acid

1. PRODUCT IDENTIFICATION / COMPANY ADDRESS

Trade Name	Hydrochloric Acid (HCl) aqueous all grades	**Common Name**	Hydrochloric Acid	**Synonyms**	Muriatic Acid, Chlorohydric acid, Spirit of Salt,
Company Name / Address / Phone / Fax	**Tata Chemicals Limited,** Mithapur District: Devbhoomi Dwarka (Gujarat) 361 345 INDIA ***Contact in case of Emergency Only:*** +91(02892 675802 /03) Contact Person :+91 9227676113 Mr. Devendra Thakur				
Chemical Name	Hydrochloric Acid				

2. HAZARD IDENTIFICATION

Hazard Classification	GHS: CONTACT HAZARD - SKIN	Category 1B - Causes severe skin burns and eye damage.
	GHS: CONTACT HAZARD - EYE	Category 1 - Causes serious eye damage
	GHS: ACUTE TOXICITY - INHALATION	Category 4 - Harmful if inhaled
	GHS: ACUTE TOXICITY - ORAL	Category 4 - Harmful if swallowed.
	GHS: TARGET ORGAN TOXICITY(REPEATED EXPOSURE)	Category 1 - Causes damage to teeth through prolonged or repeated exposure
	GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE)	Category 1 - Causes damage to teeth through prolonged or repeated exposure
	GHS: CARCINOGENICITY:	Not classified as a carcinogen per GHS criteria. This material is not classifiable as to its carcinogenicity to humans (Group 3 - IARC). ACGIH - A4 Carcinogen - Not classifiable as a human carcinogen.

LABEL ELEMENTS	HAZARD PICTOGRAMS. 
Signal word	Danger
Hazard statement	• Causes severe skin burns and eye damage • Causes serious eye damage • Harmful if swallowed • Harmful if inhaled • Causes damage to organs through prolonged or repeated exposure (teeth)
Precautionary statement	Wear protective gloves, protective clothing, eye, and face protection • Do not breathe mist, vapours, or spray • Wash thoroughly after handling • Do not eat, drink or smoke when using this product • Use only outdoors or in a well-ventilated area • IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing • IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse SKIN with water/shower • IF SWALLOWED : Rinse mouth. Do NOT induce vomiting • Immediately call a POISON CENTER or doctor/physician • Wash contaminated clothing before reuse • IF INHALED: Remove person to fresh air and keep comfortable for breathing • Call a POISON CENTER or doctor/physician if you feel unwell • Specific treatment (see First Aid information on product label and/or Section 4 of the SDS

3. COMPOSITION / INFORMATION AND INGREDIENTS

Structural Formula	H-Cl	**Chemical Family**	Acid
		Molecular weight	36.46g/mol
CAS No	7647-01-0 (HCl) 7732-18-5 (H_2O)	**Molecular Formula**	HCl

Name	Product identifier	%	Classification
Hydrogen chloride	7647-01-0	9-36% (HCl) 91 – 63% (H_2O)	• Causes severe skin burns and eye damage • Causes serious eye damage • Harmful if swallowed • Harmful if inhaled • Causes damage to organs through prolonged or repeated exposure (teeth)

4. FIRST AID MEASURE

Ingestion	• Do NOT induce vomiting. • If victim is conscious and alert, give 2-4 cup full of milk • Consult a doctor immediately. • Never give anything by mouth to an unconscious person.
Inhalation	• Remove patient to fresh air. • Administer approved oxygen supply if breathing is difficult. • Administer artificial respiration or CPR if breathing has ceased. • Get medical attention immediately.
Eyes	• Immediately flush eyes with large amounts of water for at least 30 minutes, holding lids apart to ensure flushing of the entire surface. • Get medical aid immediately. • Do NOT allow victim to rub eyes or keep eyes closed.
Skin	• Immediately flush skin with copious quantities of water for at least 15 minutes while removing contaminated clothing and shoes. • Cold water may be used. • Get medical attention immediately.
Antidote	

Most important symptoms/ effects, acute and or delayed	**Eye Contact-** • May cause irreversible eye injury. • Vapor or mist may cause irritation and severe burns. • Contact with liquid is corrosive to the eyes and causes severe burns. • May cause conjunctivitis May cause permanent damage. **Inhalation-** • Causes severe respiratory tract inflammation. • Destructive to tissues of mucous membranes. • Coughing, difficulty breathing, pulmonary edema, collapse, respiratory system and lung damage, possible coma and possibly death. **Skin contact-** • May be absorbed through the skin in harmful amounts. • Contact with liquid is corrosive and causes severe burns and ulceration. • May cause photosensitization in certain individuals. **Ingestion-** • May cause circulatory system failure. • Can causes severe digestive tract burns with abdominal pain, vomiting, and possible death. • May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.
Indication of immediate medical attention and special treatment needed	May aggravate pre-existing conditions such as: eye disorders that decrease tear production or have reduced integrity of the eye; skin disorders that compromise the integrity of the skin; and respiratory conditions including asthma and other breathing disorders.

5. FIRE FIGHTING MEASURES

Fire extinguishing media	Not applicable
Hazardous decomposition products	Hydrogen chloride, Chlorine, Hydrogen gas
Special fire fighting procedure	Non-flammable.
Precaution to Fire Fighters	Use media suitable for surrounding materials.

6. ACCIDENTAL RELEASE MEASURES

Personal precaution	• Use proper personal protective equipment as indicated in Section 8. • Restrict access to affected area. • Keep people away from and upwind of spill/leak.
Precautions for the environment	Keep out of water supplies and sewers. This material is acidic and may lower the pH of the surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.
Clean up method	• Large spills may be neutralized with dilute alkaline solutions of soda ash, or lime. • Absorb spill using an absorbent, noncombustible material such as earth, sand, or vermiculite

7. HANDLING AND STORAGE

General precaution	• Wash thoroughly after handling. • Use with adequate ventilation. • Do not get on skin or in eyes. • Do not ingest or inhale. • Do not allow smoking or food consumption while handling.
Personal protection	• Remove contaminated clothing and wash before re-use. • Wear personal protective equipment as per Section-8
Storage	• Keep away from heat and flame. • Do not store in direct sunlight. • Store in a cool, dry, well-ventilated area away from incompatible substances. • Keep tightly closed. • Do not add any other material to the container.
Incompatibilities	Alkalis, metals, oxidizing agents, Mercuric sulphate, Perchloric acid, Carbides of calcium, cesium, rubidium, Acetylides of cesium and rubidium, Phosphides of calcium and uranium, Lithium silicide

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Personal protection

Skin	• Chemical protective gloves, gum boots, and/or other chemical protective clothing to prevent all possible skin contact. • A chemical protective acid-resistant full-body encapsulating suit and respiratory protection may be required in some operations. • Have a safety shower/eye-wash fountain readily available in the immediate work area.	**Eyes**	• Wear appropriate protective face shield and eyeglasses or chemical safety goggles.
Respiration	• Use cartridge type gas mask to evacuate from area. • To attend emergency wear self-contained breathing apparatus or supplied airline.	**Other**	

Exposure limits

TLV-TWA	2 ppm	**TLV-STEL**	5 ppm

Appropriate Engineering Control	Use closed systems when possible. Provide local exhaust ventilation where vapor or mist may be generated. Ensure compliance with applicable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear / colorless Liquid	**Molecular Weight**	36.46g/mol	**Specific gravity**	No data available
Odour/Odor threshold	strong odor – pungent odor	**Flash Point °C**	Not Pertinent	**pH/ Acidity**	1.1
Auto Ignition Temp. °C	Not Pertinent	**Boiling Point °C @ 760 mm Hg**	108.6 0C	**Melting Point °C**	
Vapor Press. Mm Hg @ 20 °C	1.41 kPa (10.6 mm Hg) at 20 °C	**Vapour Density**		**Water Solubility @ 20 °C**	Soluble in water
LEL %	Not Pertinent	**UEL %**	Not Pertinent	**% Volatile**	
Evaporation rate		**Viscosity @ 25 °C**		**PH**	
Octanol / Water Partition Coefficient	No data Available			No data available	

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.	**Possibility of Hazardous reaction**	HCl itself does not polymerize. Reaction of HCl with some incompatible materials can cause polymerization.
Hazardous Reactions/ Decomposition products	Hydrogen chloride, hydrogen gas.	**Incompatible Materials**	Acetate, acetic anhydride, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, calcium phosphide, cesium acetylene carbide, cesium carbide, chlorosulfonic acid, 1,1-difluoroethylene, ethylene diamine, ethyleneimine, fluorine, lithium silicide, magnesium boride, mercuric sulfate, oleum, perchloric acid, potassium permanganate,

			b-propiolactone, propylene oxide, rubidum acetylene carbide, rubidum carbide, silver perchlorate + carbon tetrachloride, sodium, sodium hydroxide, sulfuric acid, uranium phosphide, vinyl acetate. Substance polymerizes on contact with aldehydes or epoxides. Reacts with most common metals to produce hydrogen. Amines, metal oxides, acetic anhydride, formaldehyde, alkalies, carbonates, strong bases, nitric acid, oxidizing agents, cyanides, sulphides, fluorides, phosphides, acetylides, bromides, carbides, silicides.
Condition to avoid	Incompatible materials, light.		

11. TOXICOLOGICAL INFORMATION

Routes of exposure	Inhalation, dermal, Mouth.				
LD50 (oral / rats) mg/kg	>90 mL/kg.	**LD50 (dermal/ rats)** mg/kg		**LC50 (inhalation / rats)**	3124 ppm/1H
Target Organ Effects	eyes, skin and respiratory tract.				
Symptoms related to physical, chemical & toxicological characteristics	**Inhalation (Breathing):** Respiratory System Effects: Inhalation of this material may cause: irritation of the respiratory tract with sore throat, coughing, shortness of breath, hoarseness, laryngeal spasms, upper respiratory tract enema, inflammation and ulceration, hemorrhage, chest pain, and pulmonary enema. Measurements of distress include increased respiration rate and decreased tidal volume, decreased forced expiratory volume, increased airway resistance, and reduced vital capacity. You may observe sudden circulatory collapse, glottis or esophageal enema and death. **Skin:** Skin Corrosion: Concentrated hydrochloric acid is corrosive to tissue, possibly causing redness, irritation, burns, ulceration, scarring, and possible necrosis (tissue death). Severe burns have been fatal. Sudden circulatory collapse can occur with shock if large areas of skin have been burned. **Eye:** Serious Eye Damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal enema, and corneal burn.				

12. ECOLOGICAL INFORMATION

Mobility in Soil	No data available
Persistence and degradability	This material is believed not to persist in the environment This material is believed to exist in the disassociated state in the environment If released to soil, hydrogen chloride will sink into the soil. The acid will dissolve some soil material (in particular, anything with a carbonate base) and will be somewhat neutralized. The remaining portion is thought to transport downward to the water table. If released to water, it dissociates almost completely and will be neutralized by natural alkalinity and carbon dioxide. This material is inorganic and not subject to biodegradation
Bioaccumulative Potential	This material is not expected to bioconcentrate in organisms.
Effects on fish (Ecotoxicity)	No information available.
Effects on birds	No data available
Effects on bees	No data available

13. DISPOSAL CONSIDERATIONS

• Review federal, state and local government requirements prior to disposal.

• Do not dispose of waste with normal garbage, or to sewer systems.

• Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposal facility.

14. TRANSPORT INFORMATION

UN No.	UN1789	**IMDG No.**	---
Shipping Name	HYDROCHLORIC ACID	**Hazard class**	8
Packing group	---	**Hazard Sub class**	---
Marine Pollutant	---	**Labels required**	Class 8: Corrosive material
Warning Statement	---		
Packaging / Precaution			
Shipping Marking			

15. REGULATORY INFORMATION

LABELING:

PHRASES R:

R 34 Causes burns.

R41 Risk of serious damage to eyes.

PHRASES S:

S24/25 Avoid contact with skin and eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S27 Take off immediately all contaminated clothing.

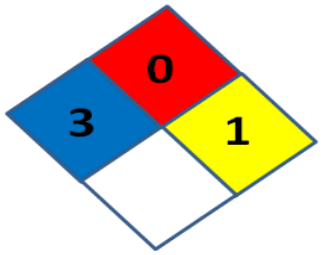
S28 After contact with skin, wash immediately with plenty of water.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell seek medical attention immediately

16. OTHER INFORMATION

NFPA Rating :



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