

MATERIAL SAFETY DATA SHEET

Hydrochloric acid


Section 1 - Chemical Product and Company Identification

MSDS Name:	Hydrochloric acid
Synonyms:	
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#	Hazard Symbols:	Risk Phrases:
7647-01-0	Hydrochloric acid	32-36	231-595-7	C	34 37
7732-18-5	Water	balance	231-791-2		

Text for R-phrases: see Section 16

Hazard Symbols:	C
	
Risk Phrases:	34 37

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Causes burns. Irritating to respiratory system.

Potential Health Effects

Eye:	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 painful sensitization to light.
Skin:	May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Contact with liquid is corrosive and causes severe burns and ulceration.
Ingestion:	May cause circulatory system failure. 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.
Inhalation:	May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. Exposure to the mist and vapor may erode exposed teeth. Causes corrosive action on the mucous membranes.
Chronic:	Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth.

Section 4 - First Aid Measures

Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin:	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
Inhalation:	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician:	Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May ignite or explode on contact with steam or moist air. Containers may explode when heated.
Extinguishing Media:	Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Large spills may be neutralized with dilute alkaline solutions of soda ash (sodium carbonate, Na ₂ CO ₃), or lime (calcium oxide, CaO). Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation. Do not get water inside containers. A vapor suppressing foam may be used to reduce vapors. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

Section 7 - Handling and Storage

Handling:	Use only in a well-ventilated area. Contents may develop pressure upon prolonged storage. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood. Use caution when opening. Keep from contact with moist air and steam.
Storage:	Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store in metal containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:	
	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits	
	CAS# 7647-01-0:
	United Kingdom, WEL - TWA: 1 ppm TWA (aerosol mist and gas); 2 mg/m ³ TWA (aerosol mist and gas) United Kingdom, WEL - STEL: 5 ppm STEL (aerosol mist and gas); 8 mg/m ³ STEL (aerosol mist and gas)
	United States OSHA: ; 5 ppm Ceiling; 7 mg/m ³ Ceiling
	Belgium - TWA: 5 ppm VLE; 8 mg/m ³ VLE Belgium - STEL: 10 ppm VLE; 15 mg/m ³ VLE
	France - VLE: 5 ppm VLE; 7.6 mg/m ³ VLE
	Germany: 8 mg/m ³ TWA
	Japan: 5 ppm Ceiling; 7.5 mg/m ³ Ceiling
	Malaysia: 5 ppm Ceiling; 7.5 mg/m ³ Ceiling
	Netherlands: 10 ppm STEL; 15 mg/m ³ STEL Netherlands: 5 ppm MAC; 8 mg/m ³ MAC
	Spain: 5 ppm VLA-ED; 7.6 mg/m ³ VLA-ED Spain: 10 ppm VLA-EC; 15 mg/m ³ VLA-EC
	CAS# 7732-18-5:

Personal Protective Equipment

Eyes:	Wear chemical splash goggles.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	colorless
Odor:	pungent odor - strong odor
pH:	<1
Vapor Pressure:	125mbar @20 deg C
Viscosity:	1.9 mPa.s @15 deg C
Boiling Point:	57 deg C @760mmHg (134.60°F)
Freezing/Melting Point:	-35 deg C (-31.00°F)
Autoignition Temperature:	Not available
Flash Point:	Not available
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
Decomposition Temperature:	
Solubility in water:	miscible with water: 823 g/l (0°C); 561
Specific Gravity/Density:	1.180
Molecular Formula:	HCl
Molecular Weight:	36.45

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Mechanical shock, incompatible materials, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials	Metals, strong oxidizing agents, bases, acetic anhydride, alkali metals, aluminum, amines, copper, copper alloys, fluorine, sodium hydroxide, steel, sulfuric acid, vinyl acetate, potassium permanganate, cesium acetylene carbide, lithium silicide, rubidium acetylene carbide, rubidium carbide, sodium, aldehydes (e.g. acetaldehyde, acrolein, chloral, formaldehyde), caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide), epoxides (e.g. butyl glycidyl ether), water reactive substances (e.g. acetic anhydride, alkyl aluminum chloride, calcium carbide, ethyl dichlorosilane), chlorosulfonic acid, oleum, methyl vinyl ether, perchloric acid, calcium phosphide, acetates, cesium carbide, carbides.
Hazardous Decomposition Products	Hydrogen chloride, chlorine, hydrogen gas.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 7647-01-0: MW4025000 MW4031000 CAS# 7732-18-5: ZC0110000
LD50/LC50:	RTECS: CAS# 7647-01-0: Inhalation, mouse: LC50 = 1108 ppm/1H; Inhalation, mouse: LC50 = 20487 mg/m ³ /5M; Inhalation, mouse: LC50 = 3940 mg/m ³ /30M; Inhalation, mouse: LC50 = 8300 mg/m ³ /30M; Inhalation, rat: LC50 = 3124 ppm/1H; Inhalation, rat: LC50 = 60938 mg/m ³ /5M; Inhalation, rat: LC50 = 7004 mg/m ³ /30M; Inhalation, rat: LC50 = 45000 mg/m ³ /5M; Inhalation, rat: LC50 = 8300 mg/m ³ /30M; Oral, rabbit: LD50 = 900 mg/kg; RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg; Other:
Carcinogenicity:	Hydrochloric acid - IARC: Group 3 (not classifiable) Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:	Fish: Bluegill/Sunfish: 3.6 mg/l; 48H; Lethal (unspecified)
Other:	Do not empty into drains.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	HYDROCHLORIC ACID	HYDROCHLORIC ACID	HYDROCHLORIC ACID
Hazard Class:	8	8	8
UN Number:	1789	1789	1789
Packing Group:	II	II	II

USA RQ: CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases:
➤ R 34 Causes burns.
➤ R 37 Irritating to respiratory system.
Safety Phrases:
➤ S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
➤ S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
WGK (Water Danger/Protection)
➤ CAS# 7647-01-0: 1
➤ CAS# 7732-18-5: Not available
Canada
➤ CAS# 7647-01-0 is listed on Canada's DSL List
➤ CAS# 7732-18-5 is listed on Canada's DSL List
US Federal
➤ TSCA
➤ CAS# 7647-01-0 is listed on the TSCA Inventory.
➤ CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

Text for R-phrases from Section 2
➤ R 34 Causes burns.
➤ R 37 Irritating to respiratory system.

MSDS Creation Date:	July 22, 2015
Revision #0 Date	

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