



MATERIAL SAFETY DATA SHEET (HYDROCHLORIC ACID)

I. PRODUCT IDENTIFICATION

Chemical Name : Hydrochloric Acid
Trade Name : Technical Grade Muriatic Acid
Synonyms : Muriatic Acid, Spirit of Salts

II. COMPOSITION / INGREDIENTS

Hydrochloric Acid, % : 32 – 34 % by weight
Chemical Formula : HCl
Molecular Weight : 36.46 g/mole
CAS Registry No. : 7647-01-0

III. HAZARDS IDENTIFICATION

THIS PRODUCT MAY BE : corrosive, toxic and a major potential hazard upon contact to skin, eyes and respiratory tract.

TOXICITY ROUTES OF EXPOSURE :

Ingestion can cause severe burns of the mucous membranes of the mouth, esophagus and stomach; pain, nausea and vomiting may also occur.

Inhalation causes irritation of the upper respiratory tract resulting in cough, burning of the throat and choking sensation.

Skin contact to a high concentration of the HCl gas or liquid may cause burns; repeated or prolonged exposures to dilute solutions may cause dermatitis.

Eye exposure to high concentration of the acid can cause eye irritation to severe destruction like prolonged or permanent visual impairment, including blindness. These effects occur rapidly affecting all parts of the eye. Mist can also cause irritation to destructive burns.

OVEREXPOSURE :

Can cause serious damage to all body tissues contacted.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Fumes may aggravate eye, skin or respiratory conditions. Effects are usually limited to inflammation and occasionally ulceration of the nose, throat and larynx, if inhaled deeply, pulmonary edema may occur.

IV. FIRST AID MEASURES

SKIN : Remove contaminated clothing and immediately wash skin for a minimum of 15 minutes. Call or see a physician.

EYES : Immediately flush eyes with large amount of water. Occasionally lifting the upper and lower eyelids and rotating the eyeballs. Continue flushing for a minimum of 15 minutes. Call a physician.

INHALATION : Remove to fresh air. If breathing stops, administer artificial respiration. Call a physician.

INGESTION : DO NOT induce vomiting. Rinse or wash mouth with water. If person is conscious, give 2 or more glasses of water. If unconscious, never give anything **by mouth. See a physician immediately.**

V. FIRE FIGHTING MEASURES

Autoignition Point : Not Applicable

Flash Point : Not Applicable

Flammability/Explosive limits : Not Applicable

Fire/Explosion Hazards: Emits toxic and choking fumes of hydrogen chloride. Hydrochloric acid is not flammable but flammable and explosive hydrogen gas may be formed on contact with metals.

Fire Prevention/ Extinguishing Media : Not Applicable

VI. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR RELEASE :

Move people from the area. Move upwind. Avoid contact with acid. Stop leaks if safe to do so. Reposition container if this will reduce or stop leakage. If leak continues, remove leaking container from vehicle or move other materials from vehicle away from container. Absorb spill with sand or earth. If available, cover the spill with excess soda ash, lime or sodium bicarbonate, otherwise, wash away with large amounts of water. Scoop slurry to plastic drums. If leak cannot be safely stopped or if contents cannot be safely transferred to a sound container, contact fire brigade.

VII. HANDLING AND STORAGE

Storage Requirements: Keep container tightly closed.

FOR SMALL VOLUMES : Maybe stored in plastic jugs, carboys, and plastic drums.

FOR LARGE VOLUMES : Store in rubber-lined or epoxy lined steel storage tanks or fiber glass reinforced polyester (FRP) tanks.

Incompatible Materials: Store away from heat

Use Instructions: Wear suitable protective clothing, gloves and eye/face protection. In case of insufficient ventilation, wear suitable respiratory equipment.



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VIII. EXPOSURE CONTROLS AND PROTECTION

Ventilation: Use only in well-ventilated areas.

Protective Equipment for the eyes and skin :

Splash proof and face shield goggles, disposable latex/ rubber apron, PVC rain suit, rubber boots with pant legs over boots.

Respiratory Protection Requirements: NIOSH/MSHA approved respirator should be used.

Precautionary Hygiene/control measures :

Avoid contact with skin, eyes, and clothing. Do not breathe mist or vapor. Wash thoroughly after handling. Safety showers and eye wash fountains should be available in storage and handling area. Any protective clothing contaminated with hydrochloric acid should be removed immediately and thoroughly laundered before wearing again.

IX. PHYSICAL AND CHEMICAL PROPERTIES

STATE : fuming liquid
APPEARANCE : colorless to slightly yellow
ODOR : Irritating
pH : Strong acid <1
BOILING POINT : 85° C
FLASH POINT : Not determined
SPECIFIC GRAVITY : 1.150 -1.164
VAPOR PRESSURE : 20 hPa @ 20° C
SOLUBILITY IN : WATER: miscible, BASE : miscible

X. STABILITY AND REACTIVITY

Stability : Stable under normal handling conditions.

Hazardous polymerization will not occur.

Hazardous decomposition product: HCl gas will not decompose.

Materials and conditions to avoid (incompatibility) are:

Avoid high temperatures. Containers may burst. Corrosive to most metals, concrete, some plastics, some rubber and coatings. Fumes forms droplets which settle and promote corrosion of metals and unprotected equipment. Mixing with strong acids can cause evolution of hydrogen chloride gas. Oxidizing agents will cause the release of toxic chlorine gas. Contact of liquid acid or gas with alkali or active metal may develop enough heat to cause fire in adjacent combustible material.

XI. TOXICOLOGICAL INFORMATION

Reproductive Effects: No data available

MUTAGENICITY : Not applicable

CANCER INFORMATION : Not applicable

XII. ECOLOGICAL INFORMATION

ECOTOXICITY DATA: High acidity may pose potential hazard to plant and marine life.

WATER-POLLUTION RISK CLASSIFICATION: Slightly water-polluting substance.

XIII. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all Government and Local regulations.

XIV. TRANSPORT INFORMATION

Transportation of Dangerous Goods

TDG Classification: Do not ship by air.

DOT Hazard Classification: Class 8 : Corrosive: Group II

DOT Shipping Name : Hydrochloric acid ID: UN 1789

XV. REGULATORY INFORMATION

No data available

XVI. OTHER INFORMATION

This MSDS contains information under the sixteen (16) section headings required by ISO 11014 "Safety Data Sheet for Chemical Products".

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