

SAFETY DATA SHEET

MURIATIC ACID 20 DEG.

Product ID: AC002000

Revised: 02-27-2014

Replaces: 01-11-2013

1. IDENTIFICATION

Product Name: MURIATIC ACID 20 DEG.
Synonyms: Hydrochloric Acid; Hydrogen Chloride
CAS Number: MIXTURE
Recommended Use: Acidification (activation) of petroleum wells, scale removal, ore reduction, metal cleaning, industrial acidification.
Restrictions on Use: No data available.

Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION



Signal Word: Danger

GHS Classification: Substance or mixture corrosive to metals Category 1
Skin Corrosion/Irritation Category 1A
Serious Eye Damage/Eye Irritation Category 1
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 2
Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2

Hazard Statements: May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause damage to organs (respiratory system by inhalation).
May cause damage to organs (teeth, respiratory system) through prolonged or repeated exposure (by inhalation).

Precautionary Statements:

Prevention: Keep only in original container.
Do not breathe dust, fume, gas, mist, vapours or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear gloves, eye and face protection and protective clothing.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage: Store in a secure manner.
Store in corrosive resistant container with a resistant inner liner.

Disposal: Dispose of in accordance with local, regional and international regulations.

Hazards Not Otherwise Classified: Reacts with most metals to form explosive/flammable hydrogen gas. May react violently with water.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Hydrogen Chloride	7647-01-0	~ 31.5 %

4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Do not attempt to neutralize with chemical agents.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not apply oils or ointments unless ordered by the physician.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to Physicians:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

Most Important Symptoms/Effects:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Liquid or vapor may cause: severe irritation. pain. redness. watering. corneal opacity. burns. tissue destruction. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Causes: pain. redness. blistering. swelling. skin damage. scarring. permanent skin damage. death. Mists may cause: irritation. burns.

Skin Absorption: No absorption hazard expected under normal use. Less exposure may cause: dermatitis and photo sensitization. Usually penetrates the full thickness of the skin.

Inhalation: CORROSIVE-Causes severe irritation and burns. Harmful or fatal if inhaled. Vapors or mists irritate or burn the: nose. throat. upper respiratory tract. May cause: respiratory irritation. bleeding of the nose and gums. sore throat. coughing. choking. laryngeal spasms. difficulty breathing. shortness of breath. pulmonary edema. Prolonged exposure may cause: burns and ulcers to the nose and throat. Symptoms of exposure may be delayed by several hours.

Ingestion: CORROSIVE-Causes severe irritation and burns. Harmful or fatal if swallowed. Causes burns of the: mouth. throat. esophagus. stomach. Symptoms may include: difficulty swallowing. intense thirst. nausea. vomiting. diarrhea. stomach pain. circulatory collapse. Severe exposures may cause: collapse. death. Aspiration can result in severe lung damage or death.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Not combustible. For fires in area use appropriate media. For example: Water spray. Carbon dioxide. Dry chemical. Foam.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. Product generates heat upon addition of water, with possible spattering. Neutralize run-off with Lime, Soda Ash, etc., to prevent corrosion of metals and formation of Hydrogen gas. Run-off from fire control may cause pollution.

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Explosive concentrations of Hydrogen may accumulate inside metal equipment. Heat can cause evolution of gaseous Hydrogen Chloride.

Hazardous Combustion Products: Hydrogen Chloride gas. Hydrogen gas. Chlorine. Halogenated compounds.

6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Shut off source of leak if safe to do so. Contain spill, place into drums for proper disposal. Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Keep upwind of leak or spill. Adequate ventilation is required if soda ash or limestone is used, because of the consequent release of carbon dioxide gas. CAUTION: This product may react violently with alkalis and water.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. When diluting or preparing solutions, slowly add acid to water to avoid boiling and splattering.

Storage: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Highly corrosive to most metals with evolution of hydrogen gas. Store below 120 Deg. F. See Section 10 for incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
Hydrogen Chloride	5 ppm Ceiling; 7 mg/m ³ Ceiling

ACGIH Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
Hydrogen Chloride	2 ppm Ceiling

Engineering Controls: General room ventilation and local exhaust are required. Process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Acid-proof. Gauntlet-type. Neoprene. Polyvinyl chloride. Butyl rubber. Nitrile. Teflon (R). Responder (R). Viton (R).

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Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved air-purifying respirator with: Acid gas cartridge and HEPA filter. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing. Full-rubber acid suit.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Colorless to faint yellow.

Odor: Sharp, pungent, irritating odor.

Odor Threshold: N.D.

pH: < 1.00

Freezing Point (deg. F): < -35

Melting Point (deg. F): N.D.

Initial Boiling Point or Boiling Range: 176 - 183 °F

Flash Point: NONE.

Flash Point Method: N.A.

Evaporation Rate (nBuAc = 1): N.D.

Flammability (solid, gas): N.D.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Vapor Pressure (mm Hg): 15-150

Vapor Density (air=1): 1.267

Specific Gravity or Relative Density: 1.16-1.18

Solubility in Water: Complete

Partition Coefficient (n-octanol/water): N.D.

Autoignition Temperature: N.A.

Decomposition Temperature: N.D.

Viscosity: N.D.

% Volatile (wt%): 100%

VOC (wt%): 0

VOC (lbs/gal): 0

Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. May react with certain metals to produce flammable hydrogen gas. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, carbides, etc. Contact with oxidizing agents may produce chlorine gas. May react violently with incompatible substances, releasing large amounts of heat.

Conditions to Avoid: Avoid contact with water. Avoid heat, sparks or open flames. Avoid direct sunlight. Keep away from incompatibles.

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Incompatible Materials: Most metals. Alkalies. Metal Oxides. Amines. Water-reactive substances. Sulfuric acid. Oleum. Acetic Anhydride. Carbonates. Cyanides. Sulfides. Hypochlorites. Sodium. Bases. Formaldehyde. Oxidizing agents. Reducing agents. Perchloric Acid. Potassium permanganate. Aldehydes. Epoxides. Fluorine. Acetylides. Carbides. Chlorosulfonic acid. Propylene oxide. Vinyl acetate. Hexalithium disilicide. Propiolactone.

Hazardous Decomposition Products: Hydrogen chloride gas. Hydrogen gas. Chlorine.

11. TOXICOLOGICAL INFORMATION

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Hydrogen Chloride	Rat: 700 mg/kg	Rabbit: > 5010 mg/kg	1H Rat: 3,124.0 ppm

Acute Toxicity Estimate (ATE):

Oral: 2,222 mg/kg

Routes of Exposure: Eyes. Ingestion. Inhalation. Skin.

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Skin Absorption: No absorption hazard expected under normal use. Less exposure may cause: dermatitis and photo sensitization. Usually penetrates the full thickness of the skin.

Inhalation: CORROSIVE-Causes severe irritation and burns. Harmful or fatal if inhaled. Vapors or mists irritate or burn the: nose. throat. upper respiratory tract. May cause: respiratory irritation. bleeding of the nose and gums. sore throat. coughing. choking. laryngeal spasms. difficulty breathing. shortness of breath. pulmonary edema. Prolonged exposure may cause: burns and ulcers to the nose and throat. Symptoms of exposure may be delayed by several hours.

Ingestion: CORROSIVE-Causes severe irritation and burns. Harmful or fatal if swallowed. Causes burns of the: mouth. throat. esophagus. stomach. Symptoms may include: difficulty swallowing. intense thirst. nausea. vomiting. diarrhea. stomach pain. circulatory collapse. Severe exposures may cause: collapse. death. Aspiration can result in severe lung damage or death.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Respiratory system disorders. Skin disorders.

Other: Contains a material which may cause damage to the upper respiratory tract and the teeth.

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Extensive data, call for information.

Chemical Fate Information: Extensive data, call for information.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. If approved, neutralize material and flush to sewer. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Identification Number: UN1789
Proper Shipping Name: Hydrochloric Acid
Hazard Class: 8
Packing Group: II
Label Required: CORROSIVE
Reportable Quantity (RQ): 5000# (Hydrogen Chloride)

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards:

<u>Immediate (Acute)</u> Yes	<u>Delayed (Chronic)</u> No	<u>Fire Hazard</u> No	<u>Pressure Release</u> Yes	<u>Reactive</u> Yes			
<u>Regulated Components:</u>	<u>CAS</u>	<u>CERCLA</u>	<u>SARA</u>	<u>SARA</u>	<u>U.S.</u>	<u>WI</u>	<u>Prop</u>
<u>Component</u>	<u>Number</u>	<u>RQ</u>	<u>EHS</u>	<u>313</u>	<u>HAP</u>	<u>HAP</u>	<u>65</u>
Hydrogen Chloride	7647-01-0	Yes	Yes	Yes	Yes	Yes	No

*Prop 65 - May Contain the Following Trace Components:

This product contains a chemical known in the State of California to cause cancer and birth defects or other reproductive harm.

Note: RQ, TPQ, Section 313 reporting requirements are dependent upon individual ingredients. Hydrogen Chloride (gas and aerosol forms only) is on the Extremely Hazardous Substance List. In liquid form, Hydrogen Chloride (Hydrochloric Acid) is not required to be reported as an Extremely Hazardous Substance, but is subject to SARA 311 and 312 reporting requirements. Hydrochloric Acid also appears on the Section 313 list; however, the listing only applies to the gas and aerosol forms of Hydrochloric Acid.

16. OTHER INFORMATION

Hazard Rating System

Health: 3
Flammability: 0
Reactivity: 1

* = Chronic Health Hazard

NFPA Rating System

Health: 3
Flammability: 0
Reactivity: 1
Special Hazard: None

MSDS Abbreviations

N.A. = Not Applicable
N.D. = Not Determined
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
C = Ceiling Limit
N.E./Not Estab. = Not Established

MSDS Prepared by: JAK

Reason for Revision: Changes made throughout the MSDS.

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The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.