



I. Chemical Product and Company Identification

Product Name: HCl Acid Solution (0%-7.5%)
Identification #: 35-400-0075
Product Use/Class: Bulk Acid
Supplier: Nabors Completion and Production Services
515 W. Greens Road, Suite 1100, Houston, TX 77067
Supplier Tracking Code: 814
Emergency Contact: CHEMTREC 1 (800) 424-9300
Prepared By: RAA
Date Prepared: 09/08/2008

II. Composition/Information on Ingredients

Chemical Name: Hydrogen Chloride
CAS Number: 7647-01-0
Percent by Mass Less Than: 7

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: 5 ppm
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: 2 ppm
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

III. Hazardous Identification

Emergency Overview:

Danger! HCl is a very strong acid. Solutions can be extremely corrosive. The severity of effects depends on the concentration of the solution and the duration of the contact. Causes severe eye and skin burns. Causes severe digestive and respiratory tract burns. May cause fetal effects based upon animal studies. In general, HCl solutions and mist with a pH of 3 or less are a significant health concern. Water white to yellow green fuming liquid with pungent, choking odor. Corrosive material, avoid contact without PPE. Strong oxidizing agents, reducing agents, metals, bases, aldehydes, epoxides, explosives, acetylides, borides, carbides, cyanides, sulfides, and phosphides. Contact with common metals produces hydrogen gas which may form explosive mixtures in air. The DLH for Hydrogen Chloride is 50 ppm.

Eye Contact:

Low concentrations of vapor or mist (10-35 ppm) can be immediately irritating, causing redness. Concentrated vapor, mist, or splashed liquid can cause severe irritation, burns, and permanent blindness.

Skin Contact:

Liquid can cause severe irritation (redness, swelling, and pain) and corrosive skin damage with permanent scarring or even death. High vapor or mist concentration may cause redness, irritation, and burns to skin if contact is prolonged. Skin covered by perspiration or dampened clothing can also be affected. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material. May be absorbed through the skin in harmful amounts.

Inhalation:

Vapor or mist from concentrated solutions can cause severe nasal irritation, sore throat, choking, coughing, and difficulty breathing (50-100 ppm). Prolonged exposures can cause burns and ulcers to the nose and throat. Severe exposures (1000-2000 ppm), for even a few minutes, can cause a life-threatening accumulation of fluid in the lungs (pulmonary edema).

Ingestion:

If ingested, solutions can cause corrosive burns to mouth, throat, esophagus, and stomach. May cause circulatory system failure. Symptoms may include difficulty in swallowing, intense thirst, nausea, vomiting, diarrhea, and in severe cases, collapse and death. Small amounts of acid which enter the lungs during ingestion or aspiration while vomiting can cause serious lung injury and death.

Chronic Harards:

Not listed as a human carcinogen by OSHA, IARC, or NTP. Repeated exposure to low concentrations of mist can cause brownish discoloration and damage to tooth enamel. Dental erosion becomes more severe with increased exposure. Repeated exposure to low concentrations can cause nose and gum bleeding. Chronic bronchitis and stomach pain (gastritis) have also been reported.

Primary Route(s) of Entry:	<input checked="" type="checkbox"/> Skin Contact	<input checked="" type="checkbox"/> Eye Contact	<input type="checkbox"/> Ingestion
	<input checked="" type="checkbox"/> Skin Absorbtion	<input checked="" type="checkbox"/> Inhalation	

IV. First Aid Measures

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20-30 minutes, by the clock, holding the eyelid(s) open. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting. Take care not to rinse contaminated water into the non-affected eye. If irritation persists, repeat flushing. Quickly transport victim to emergency care facility.

Skin Contact: IMMEDIATELY flush contaminated area with lukewarm, gently flowing soap and water for at least 20-30 minutes, by the clock. Under running water, remove contaminated clothing, shoes, and leather goods. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting. Transport victim to emergency care facility immediately. Completely decontaminate clothing, shoes, and leather goods before re-use or dispose.

Inhalation: Remove victim to fresh air. If breathing has ceased, do not give mouth-to-mouth but use mechanical device such as a bag and mask. If breathing is difficult, oxygen may be beneficial if administered by a person trained in its use, preferably on a physician's advise. Ensure victim is completely at rest. Do not allow any physical exertion. Symptoms may be delayed up to 48 hours after exposure. Immediately transport victim to an emergency medical facility.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 8 to 10 oz of water. If milk is available, it may be administered, AFTER the water has been given. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Quickly transport victim to an emergency medical facility.

V. Fire Fighting Measures

Flash Point: N/A

Auto Ignition Temperature: N/A

Lower Explosive Temp.: N/A

Upper Explosive Temp.: N/A

Extinguishing Media: Use suitable media for surrounding material.

Unusual Fire and Explosive Harards: Contact with common metals produces hydrogen gas which may form explosive mixtures in air. The IDLH for Hydrogen Chloride is 50 ppm. Reaction with water may generate heat that will increase the concentration of fumes in the air. Containers may explode when heated or if contaminated with water.

Special Fire Fighting Procedures: Protect against decomposition products, wear positive pressure, full-facepiece SCBA or SAR with auxiliary SCBA. If this material is involved in a fire, keep surrounding containers cool with water spray and contain all runoff. Stay away from ends of tanks.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by fully-trained personnel only. Wear protective equipment; stop leak at source; dike area; prevent material from entering waterway; prevent contact with strong oxidizers and reducers; neutralize with soda ash, pump material to reclaim container; use absorbent which does not react with spilled chemical on remaining material; and, shovel into disposal container. Notify appropriate government authorities.

VII. Handling and Storage

Handling: Prevent release of vapor or mist into workplace air. Always ensure adequate ventilation in handling areas. When diluting or preparing solutions, slowly add acid to water to avoid boiling or splattering. Do not wear contaminated clothing or shoes. Wash prior to eating, drinking, smoking, or use of restroom and when leaving work. Heating of non-vented container may cause container to rupture. Do not dispose of material or empty container to the environment. For more detailed handling information for tank trucks and rail cars contact chemical manufacturer or supplier, or industry approved reference guides.

Storage: Do not allow to freeze. Do not store near heat or open flame. Store in a cool, dry, well-vented area, out of direct sunlight. Drums should be vented when received and then at least once a week to relieve internal pressure. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area. Floors should not allow liquids to penetrate. Wood and other organic/combustible materials should not be used on floors, structural materials, and ventilation systems in the storage area. Storage tanks should be above ground and surrounded with dikes capable of holding entire contents. Limit quantity of material in storage. Restrict access to storage area. Post warning signs as required. Keep storage area separate from populated work areas. Inspect periodically for deficiencies such as damage or leaks.

VIII. Exposure Controls/Personal Protection

Engineering Controls: Engineering methods to control hazardous conditions are preferred. Methods include mechanical ventilation, process or personnel enclosure, and control of process conditions. Enclosure and isolation is recommended when dealing with large quantities. Use corrosion-resistant ventilation systems separate from other exhaust ventilation systems. Exhaust directly to outside. Local exhaust is generally required. Cleaning of contaminated exhaust air before release to the environment is usually required. Consider down-draft general exhaust ventilation in potential high concentration areas such as unloading stations, cylinder, drum or carboy filling stations, treatment vats, and waste disposal areas. Sufficient replacement air is necessary when exhausting.

Respiratory Protection: Avoid vapor and mist without respiratory protection. Exposure up to 50 ppm: Wear chemical cartridge respirator with cartridge to protect against hydrogen chloride; or gas mask with canister to protect against hydrogen chloride; or powered air-purifying respirator with cartridge to protect against hydrogen chloride; or SAR; or full face-piece SCBA.

Skin Protection: Impervious gloves, chemical goggles, long sleeve shirt and trousers, and apron (Accidental release- Full chemical suit, impervious gloves, chemical goggles, and chemical protecting boots to prevent all chemical exposure.)

Eye Protection: Face shield or gas-tight chemical splash goggles.

Other Protective Equipment: Emergency eyewash stations and deluge showers should be available in the work area.

Hygienic Practices: Wash thoroughly after handling.

IX. Physical and Chemical Properties

Boiling Point:	60-105 C (140-221 F)	Vapor Density:	.7-1.3 @ 20C
Odor:	Pungent, choking odor	Odor Threshold:	3 ppm causes olfactory fatigue
Appearance:	Colorless to yellow-green	Evaporation Rate:	<1
Solubility in H2O:	100%	Specific Gravity:	1.0-1.2 @ 15.5 C
Freeze Point:	-34- -15C (-29- 5F)	pH at 50.0%:	for HCl solutions: -.7, .1 (1.0N), 1.1 (.1N), 2.02 (.01N), 2 (.2% solution)
Vapor Pressure:	14-80 mmHg @ 20 C	Viscosity:	No Information
Physical State:	Fuming Liquid		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	Avoid excessive heat, direct sunlight, moisture, mechanical shock and decomposition.
Incompatibility:	Strong oxidizing agents, reducing agents, metals, bases, aldehydes, epoxides, explosives, acetylides, borides, carbides, silicides, cyanides, sulfides, and phosphide. Very corrosive to most metals.
Hazardous Decomposition Products:	HCl is thermally stable up to temperatures of about 1500 C (2730 F). At higher temperatures it breaks down to form toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
Hazardous Polymization:	Will not occur under normal conditions. Reaction of HCl with some incompatible materials such as acetylides and epoxides can cause polymerization.
Stability:	This product is stable under normal storage conditions. Large amounts of heat can be released when concentrated HCl is mixed with water or organic solvents.

XI. Toxicological Properties

Toxicological Properties:	Symptoms include irritation of eyes, skin and mucous membranes, and corrosive eye damage. Death was due to lung injury. SUBCHRONIC EFFECTS: No data. CHRONIC EFFECTS/CARCINOGENICITY: Not listed as a human carcinogen by OSHA, IARC, or NTP. EPIDEMIOLOGY: No data. TERATOLOGY: No data. REPRODUCTIVE EFFECTS: Femal rats: 450 mg/m ³ ; 1 hour either prior to mating or on day 9 of pregnancy; developmental effects observed; toxic effects including mortality to mothers NEUROTOXICITY: No data. MUTAGENICITY: Mutagenic effects have been reported in one bacterial test (E. Coli-DNA repair), in three insect tests (Drosophila, grasshopper) and in one in vitro mammalian cell test (hamster lung cells). HCl was negative in another in vitro mammalian cell test (Syrian hamster embryo cells). The significance of the positive reports is questionable since pH (acidity) can influence the results of short-term tests.
Oral:	INGESTION EFFECTS: Rabbit: Oral LD ₅₀ ; 900 mg/kg
Dermal:	EYE EFFECTS: Rabbit: 1% solution; 20 seconds; scarring of cornea 5 mg; 30 seconds; mild irritation 5% solution; unknown duration; minimal irritation SKIN EFFECTS: Rabbit: 0.5 mL; 17% solution; 4 hours; corrosive burns
Inhalation:	INHALATION EFFECTS: Aerosols (mists) of HCl Acid: Rat: LC ₅₀ ; 8300 mg/m ³ (5666 ppm); 30 minute exposure Rat: LC ₅₀ ; 45600 mg/m ³ (31008 ppm); 5 minute exposure Mouse: LC ₅₀ ; 3100 mg/m ³ (2142 ppm); 30 minute exposure Mouse: LC ₅₀ ; 16500 mg/m ³ (11238 ppm); 5 minute exposure

XII. Ecological Information

Ecological Properties: This material is expected to be toxic to aquatic life.
Ecotoxicity: ECOTOXICITY: Fish Toxicity LC50=862 mg/l; Trout LC100=10 mg/l/24hr; Mosquito fish TLm (fresh water)=282 ppm/96hr; Goldfish LC50=178 mg/l/1-2hr survival time; Bluegill LC50=3.6 mg/l/48hr; Shrimp LC50(salt water)= 100-330 ppm/48hr; Shore Crab LC50=240 mg/l/48hr; Chronic Plant Toxicity=100ppm;

Chemical Fate Information: When released into the soil, this material is not expected to biodegrade. Substance will neutralize soil carbonate-based components. When released into the soil, this material may leach into groundwater.

XIII. Disposal Consideration

Disposal Method: Because product uses, mixtures, processes, or contamination may render this material hazardous, it is the responsibility of the user/owner of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of this material and the empty containers, liners, and rinsate according to current local, state, and federal regulations.

RCRA Status: Depending on the concentration of HCl acid in solution, may be considered an RCRA waste. The EPA Hazardous Waste number is D002.

XIV. Transportation Information

DOT Proper Shipping Name: Hydrochloric acid solution

DOT Technical Name:

DOT Hazard Class: 8

DOT Hazard Subclass:

DOT UN/NA Number: UN1789

Packing Group: II

Resp. Guide Page:

XV. Regulatory Information

OSHA:	Hazardous material.
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Acute
SARA Section 313 Required Reporting:	

XVI. Other Information

Other Information:	NA = Not applicable ND = Not Determined NI = No Information NE = Not Established
MSDS Updated:	5/19/2014
MSDS Printed:	1/9/2015

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Nabors Completion & Production Services Company (Nabors) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of Nabors.