



Material Safety Data Sheet

Protective Equipment	TDG	WHMIS
<p>See SECTION VIII for details</p>	<p>Shipping Name: HYDROCHLORIC ACID SOLUTION or HYDROCHLORIC ACID TDG Classification: Class 8 UN Number (PIN): UN 1789 Packing Group: PG II Emergency Response Guide Number: 157 Emergency Phone: (403) 266 6000</p> <p>See SECTION XIV for details</p>	<p>See SECTION XV for details</p>
DOT		
<p>CAL</p>	<p>Shipping Name: HYDROCHLORIC ACID SOLUTION or HYDROCHLORIC ACID HAZMAT Classification: Class 8 UN Number (PIN): UN 1789 Packing Group: PG II Emergency Response Guide Number: 157 Emergency Phone: (403) 266 6000</p>	<p>NFPA</p>

SECTION I: Chemical Product and Company Identification

Common/Trade Name	Hydrochloric Acid
Synonyms	Muriatic Acid
Chemical Name	Hydrochloric Acid
Chemical Formula	HCl
Chemical Family	Inorganic Acid
Supplier	Calfrac Well Services Ltd. 411- 8 th Ave SW Calgary, Alberta T2P 1E3
Document Number	MSDS-HCl Rev 4
Date of Preparation	January 12, 2009
Prepared By	Calfrac Well Services Ltd
Phone number of Preparer	(403) 266 6000
Material Uses	Oilwell Acidizing

SECTION II: Hazardous Ingredients

Name	Percent (%)	CAS#	LD ₅₀ (oral rat)	LC ₅₀ (dermal rabbit)
1. Hydrochloric Acid	100	7647-01-0	Not determined	900 mg/kg

SECTION III: Hazards Identification

Routes of Entry	[XX] SKIN [XX] EYE CONTACT [XX] INHALATION [XX] INGESTION
Threshold Limit Value	ACGIH TLV: STEL = 7.5 mg/m ³
Skin Contact	Skin contact causes severe burns and possible ulceration
Eye Contact	Eye contact causes severe burns and permanent eye damage
Ingestion	Ingestion causes burns of the mouth, throat and gastrointestinal tract
Inhalation	Inhalation causes damage to nasal and respiratory passages and pulmonary edema

SECTION IV: First Aid Measures

Skin Contact	Immediately flush with large amounts of water; seek immediate medical attention
Eye Contact	Immediately flush with large amounts of water for at least 15 minutes; seek immediate medical attention
Ingestion	DO NOT INDUCE VOMITING. Give water or milk if conscious; seek immediate medical attention
Inhalation	Remove to fresh air immediately. Give artificial respiration if not breathing; seek immediate medical attention

SECTION V: Fire Fighting Measures

Flash Point	Noncombustible
Flammable Limits	Not available
Extinguishing Media	Water spray
Special Fire Fighting Procedures	Wear self-contained breathing apparatus and protective clothing
Unusual Fire and Explosion Hazards	Contact with metals produces hydrogen which may form explosive mixtures with air

SECTION VI: Accidental Release Measures

Steps to be taken in case the Material is Spilled or Released	Evacuate the area of all unnecessary personnel. Wear suitable PPE. Eliminate any sources of ignition until the area is deemed free from explosion or fire hazards. Contain the release and eliminate its source if this can be done without risk. Take up and containerise for proper disposal as described under Section XIII. Comply with federal, provincial and local regulations on reporting releases.
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SECTION VII: Handling and Storage

Precautions to be taken in Handling and Storing	Keep container tightly closed. Store in a cool, well-ventilated area separated from incompatible materials. DO NOT breathe vapor. DO NOT get in eyes, on skin, or on clothing. Handle empty containers with caution. Add acid CAUTIOUSLY when diluting. NEVER ADD WATER TO ACID.
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SECTION VIII: Exposure Control/Personal Protection

Special Protection Information	
Respiratory Protection	NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental controls.
Ventilation	General mechanical – approved fume hood
Protective Gloves	Neoprene, Nitrile or equivalent
Eye Protection	Safety glasses with side shields or goggles
Other Protective Equipment (Specify)	None

SECTION IX: Physical and Chemical Properties

Appearance	Clear, colorless liquid
Odor	Acrid odor
Specific Gravity	1.1885
Boiling Point (°C)	110°C
Melting Point (°C)	-74°C
Solubility in Water	Miscible
Percent Volatile by Volume	99.9% +
Evaporation Rate	2.0 (Butylacetate = 1)
Vapor Pressure (mm Hg)	160 mm Hg @ 20°C
Vapor Density (Air = 1)	1.25 (Air = 1)
pH	0

SECTION X: Stability and Reactivity

Stability	<input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
Incompatibility (Conditions to Avoid)	Heat; contact with metals; bases; amines
Conditions of Reactivity	Not known
Hazardous Decomposition Products	Toxic hydrogen chloride gas
Hazardous Polymerization	<input checked="" type="checkbox"/> WILL NOT OCCUR <input type="checkbox"/> MAY OCCUR

SECTION XI: Toxicological Information

Sensitization to Product	No Information Available
Carcinogenicity	The material is not listed (IARC, NTP, OSHA) as a cancer-causing agent
Irritancy to Product	No Information Available
Reproductive Toxicity	Test on laboratory animals indicate material may produce adverse reproductive affects
Teratogenicity	No Information Available
Mutagenicity	Test on laboratory animals indicate material may produce adverse mutagenic affects
Chronic Exposure	No Information Available
Name of Toxicological Synergistic Products	No Information Available

SECTION XII: Ecological Information

Ecological Information	No data found for product
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SECTION XIII: Disposal Considerations

Waste Disposal Method	Specified technology – neutralize to pH 6-9. Contact your local permitted waste disposal site (TSD) for permissible treatment sites.
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SECTION XIV: Transportation Information

Proper Shipping Name	HYDROCHLORIC ACID SOLUTION or HYDROCHLORIC ACID
Class	Class 8
TDG Label	Corrosive
UN Number (PIN)	UN 1789
TDG Placard	Yes
Packing Group	PG II
Emergency Response Guide Number	157
Emergency Telephone	(403) 266 6000

SECTION XV: Regulatory Information

WHMIS Classification	Class D	Division 1	Subdivision
	Class E		

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR

SECTION XVI: Other

Other Information	<p>January 12, 2009 Updated from supplier information December 12, 2002 Changes made to Section XIV: Transportation Information to reflect Clear Language.</p> <p>January 17, 2002 – Correction made to SECTION XIV Transportation Information – UN Number changed from UN 1798 to UN 1789.</p>
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