HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **HYDROCHLORIC ACID**

Revision Date: 26-Mar-2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: HYDROCHLORIC ACID
Synonyms: None
Chemical Family: Inorganic acid
Application: Solvent

Manufacturer/Supplier
Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By
Chemical Compliance
Telephone: 1-580-251-4335
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrochloric acid	7647-01-0	30 - 60%	2 ppm	5 ppm

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory burns. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards May form explosive mixtures with strong alkalis. Decomposition in fire may produce toxic gases. Reaction with steel and certain other metals generates flammable hydrogen gas. Do not allow runoff to enter waterways.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 3, Flammability 0, Reactivity 1
HMIS Ratings: Health 3, Flammability 0, Physical Hazard 1 , PPE: Joq

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use. Store locked up. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Acid gas respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Full protective chemical resistant clothing. Rubber boots.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear colorless
Odor:	Pungent acrid
pH:	0.8
Specific Gravity @ 20 C (Water=1):	1.18
Density @ 20 C (lbs./gallon):	9.82
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	230
Boiling Point/Range (C):	110
Freezing Point/Range (F):	-50
Freezing Point/Range (C):	-46
Vapor Pressure @ 20 C (mmHg):	26
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	35
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	36.5

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong alkalis.
Hazardous Decomposition Products	Flammable hydrogen gas. Chlorine. Hydrogen sulfide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Acute Toxicity

Product Information	Under certain conditions of use, some of the product ingredients may cause the following:
Inhalation	Causes severe respiratory irritation.
Eye Contact	May cause eye burns.
Skin Contact	May cause skin burns. Did not cause sensitization on laboratory animals (guinea pig)
Ingestion	Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation

Hydrochloric acid	7647-01-0	No data available	5010 mg/kg (Rabbit) >5010 mg/kg (Rabbit) 1449 mg/kg (Mouse)	3124 ppm (Rat) 1 h 3.2 mg/L (Mouse) 8.3 mg/L (aerosol, Rat) 1405 ppm (Rat) 554 ppm (Mouse)

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Hydrochloric acid	7647-01-0	EC50: 4.7 (pH) (Chlorella vulgaris) 72 h	LC50: 282 mg/L (Gambusia affinis) LC50: 20.5 mg/L (Lepomis macrochirus) LC50: 3.25 – 3.5 (pH) (Lepomis macrochirus) 96 h	EC50(3h): >= 5 and <= 5.5 (pH) (Activated sludge, domestic)	EC50: 4.9 (pH) (Daphnia magna) 48 h

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

Substances	Persistence and Degradability
Hydrochloric acid	The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate

Substances	Log Pow
Hydrochloric acid	0.25

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. TRANSPORT INFORMATION

Land Transportation

DOT

UN1789, Hydrochloric Acid Solution , 8 , II
RQ (Hydrochloric Acid - 2273 kg.)
NAERG 157

Canadian TDG
Hydrochloric Acid Solution , 8 , UN1789 , II

ADR

UN1789, Hydrochloric Acid Solution , 8 , II

Air Transportation

ICAO/IATA

UN1789, Hydrochloric Acid Solution , 8 , II
RQ (Hydrochloric Acid - 2273 kg.)

Sea Transportation

IMDG

UN1789, Hydrochloric Acid Solution , 8 , II RQ (Hydrochloric Acid - 2273 kg.)
EmS F-A, S-B

Other Transportation Information

Labels: Corrosive

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	EPA Reportable Spill Quantity is 1592 Gallons based on Hydrochloric acid (CAS: 7647-01-0).
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Corrosivity D002

California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	D1A Very Toxic Materials E Corrosive Material

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

Additional information	For additional information on the use of this product, contact your local Halliburton representative. For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****