HALLIBURTON

SAFETY DATA SHEET

Product Trade Name: **7.5% FE ACID**

Revision Date: 29-Apr-2015 **Revision Number:** 6

1. Identification

1.1. Product Identifier

Product Trade Name: 7.5% FE ACID
Synonyms: None
Chemical Family: Acid
Internal ID Code HM005789

1.2 Recommended use and restrictions on use

Application: Acid
Uses Advised Against No information available

1.3 Manufacturer's Name and Contact Details

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

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Skin Corrosion / Irritation	Category 1 B - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318

2.2. Label Elements

Hazard Pictograms

Signal Word Danger

Hazard Statements H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary Statements

Prevention	P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P280 - Wear protective gloves/protective clothing/eye protection/face protection
Response	P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P310 - Immediately call a POISON CENTER or doctor/physician P363 - Wash contaminated clothing before reuse
Storage	P405 - Store locked up
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains Substances	**CAS Number**
Hydrochloric acid	7647-01-0

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Hydrochloric acid	7647-01-0	5 - 10%	Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately. Remove contaminated clothing and launder before reuse.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed
Causes severe skin irritation with tissue destruction. Causes severe eye irritation which may damage tissue.

4.3. Indication of any immediate medical attention and special treatment needed
Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media
Suitable Extinguishing Media
Water fog, carbon dioxide, foam, dry chemical.
Extinguishing media which must not be used for safety reasons
None known.

5.2 Specific hazards arising from the substance or mixture
Special Exposure Hazards
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.

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment.
See Section 8 for additional information

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
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

7.1. Precautions for Safe Handling
Handling Precautions
Wash hands after use. Launder contaminated clothing before reuse. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Hydrochloric acid	7647-01-0	TWA: 5 ppm	TWA: 2 ppm

8.2 Appropriate engineering controls

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

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

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

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color: Clear colorless
Odor: Pungent acrid
Odor Threshold: No information available

Property	Values	Remarks/ - Method
pH:	1	
Freezing Point/Range	No information available.	
Melting Point/Range	No data available	
Boiling Point/Range	110 °C / 230 °F	
Flash Point	No data available	
Flammability (solid, gas)	No data available	
upper flammability limit	19%	
lower flammability limit	3%	
Evaporation rate	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific Gravity	1.07	
Water Solubility	Miscible with water	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition Temperature	332 °C / 630 °F	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions
Will Not Occur

10.4. Conditions to Avoid
None anticipated

10.5. Incompatible Materials
Strong alkalis.

10.6. Hazardous Decomposition Products
Flammable hydrogen gas. Chlorine. Hydrogen sulfide.

11. Toxicological Information

11.1 Information on likely routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics
Acute Toxicity

Inhalation Causes severe respiratory irritation.
Eye Contact Causes severe eye irritation. May cause eye burns.
Skin Contact Causes severe skin irritation. May cause skin burns on prolonged contact.
Ingestion Causes burns of the mouth, throat and stomach.

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

11.3 Toxicity data

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 mg/L (Rat) 1h 3.2 mg/L (Mouse) 8.3 mg/L (Rat) 1405 mg/L (Rat) 554 mg/L (Mouse)

Substances	CAS Number	Skin corrosion/irritation
Hydrochloric acid	7647-01-0	Causes severe burns

Substances	CAS Number	Eye damage/irritation
Hydrochloric acid	7647-01-0	Causes severe burns

Substances	CAS Number	Skin Sensitization
Hydrochloric acid	7647-01-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Hydrochloric acid	7647-01-0	No information available

Substances	CAS Number	Mutagenic Effects
Hydrochloric acid	7647-01-0	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Hydrochloric acid	7647-01-0	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity

Hydrochloric acid	7647-01-0	Embryo and fetotoxicity has been observed in female rats exposed to maternally toxic levels of hydrogen chloride (450 mg/m³, 1hr.).

Substances	CAS Number	STOT - single exposure
Hydrochloric acid	7647-01-0	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Hydrochloric acid	7647-01-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Hydrochloric acid	7647-01-0	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Hydrochloric acid	7647-01-0	No information available	LC50 282 mg/L (Gambusia affinis) LC50 20.5 mg/L (Lepomis macrochirus) LC50 (96h) 3.25 – 3.5 (pH) (Lepomis macrochirus)	EC50 (3h) >= 5 and <= 5.5 (pH) (Activated sludge, domestic)	EC50 (48h) 4.9 (pH) (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Hydrochloric acid	7647-01-0	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Hydrochloric acid	7647-01-0	0.25

12.4. Mobility in soil

Substances	CAS Number	Mobility
Hydrochloric acid	7647-01-0	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number:	UN1789
UN Proper Shipping Name:	Hydrochloric Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable

US DOT Bulk

DOT (Bulk)	Not applicable

Canadian TDG

UN Number:	UN1789
UN Proper Shipping Name:	Hydrochloric Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number:	UN1789
UN Proper Shipping Name:	Hydrochloric Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable
EMS:	EmS F-A, S-B

IATA/ICAO

UN Number:	UN1789
UN Proper Shipping Name:	Hydrochloric Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Special Precautions for User: None

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 6900 Gallons based on Hydrochloric acid (CAS: 7647-01-0).

EPA RCRA Hazardous Waste Classification	Corrosivity D002 If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:
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.

16. Other information

Preparation Information

Prepared By	Chemical Stewardship Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com
Revision Date:	29-Apr-2015
Reason for Revision	Update to Format SECTION: 2

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
OSHA
ECHA C&L

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End of Safety Data Sheet