

## SAFETY DATA SHEET

**Product Trade Name:** 28% Hydrochloric Acid Inhibited

**Revision Date:** 12-May-2016

**Revision Number:** 2

### 1. Identification

#### 1.1. Product Identifier

**Product Trade Name:** 28% Hydrochloric Acid Inhibited  
**Synonyms** None  
**Chemical Family:** Inorganic acid  
**Internal ID Code** HM008358

#### 1.2 Recommended use and restrictions on use

**Application:** Solvent  
**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: 1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962

Halliburton Energy Services  
645 - 7th Ave SW Suite 1800  
Calgary, AB  
T2P 4G8  
Canada

**Prepared By** Chemical Stewardship  
Telephone: 1-281-871-6107  
e-mail: fdunexchem@halliburton.com

#### 1.4. Emergency telephone number

**Emergency Telephone Number:** 1-866-519-4752 or 1-760-476-3962

### 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/Irritation	Category 1 - H318
Corrosive to Metals.	Category 1 - H290
Substances/mixtures corrosive to metal	Category 1 - H290

#### 2.2. Label Elements

**Hazard pictograms**



<b>Signal Word:</b>	Danger
<b>Hazard Statements</b>	H290 - May be corrosive to metals H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage
<b>Precautionary Statements</b>	
<b>Prevention</b>	P234 - Keep only in original container 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 P280 - Wear protective gloves/protective clothing P280 - Wear eye protection/face protection
<b>Response</b>	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 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 P390 - Absorb spillage to prevent material damage P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
<b>Storage</b>	P405 - Store locked up P406 - Store in corrosive resistant container with a resistant inner liner.
<b>Disposal</b>	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

### 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	10 - 30%	Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290)
Aldehyde	Proprietary	0.1 - 1%	Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Eye Irrit. 2B (H320) Skin Sens. 1 (H317) Aquatic Acute 2 (H401)
Methanol	67-56-1	0.1 - 1%	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Repr. 1B (H360)

			STOT SE 1 (H370) Flam. Liq. 2 (H225)
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The exact percentage (concentration) of the composition has been withheld as proprietary.

#### 4. First-Aid Measures

##### 4.1. Description of first aid measures

<b>Inhalation</b>	If inhaled, move victim to fresh air and seek medical attention.
<b>Eyes</b>	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
<b>Skin</b>	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.
<b>Ingestion</b>	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 in a fire**

May form explosive mixtures with strong alkalis. Decomposition in fire may produce harmful 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 firefighters**

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. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Launder contaminated clothing before reuse.

#### 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 (Ceiling)	TWA: 2 ppm (Ceiling)
Aldehyde	Proprietary	Not applicable	Not applicable
Methanol	67-56-1	TWA: 200 ppm	TWA: 200 ppm STEL: 250 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**

No information available

**Threshold:**

Property

Values

Remarks/ - Method

**pH:**

0.8

**Freezing Point / Range**

-46 °C / -50 °F

**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

No data available

Lower flammability limit

No data available

**Evaporation rate**

No data available

Vapor Pressure	26 mmHg
Vapor Density	No data available
Specific Gravity	No data available
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

**9.2. Other information**

Molecular Weight	36.5 g/mol
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)
Aldehyde	Proprietary	2200 mg/kg (Rat) 340 mg/kg (Guinea pig) 1160 ng/kg (Rat) 1600 mg/kg (Rat)	2000 mg/kg (Rabbit) 2000 mg/kg (Rat) 1260 mg/kg (Rabbit)	QSAR: 68.86 ppm (Rat) 4h 68.88 ppm (Rat) 4h (QSAR)
Methanol	67-56-1	300 mg/kg-bw (human) < 790 to 13,000 mg/kg (rat)	1000 mg/kg-bw (human) 17,100 mg/kg (rabbit)	10 mg/L (human, vapor, 4h)

Substances	CAS Number	Skin corrosion/irritation
Hydrochloric acid	7647-01-0	Causes severe burns
Aldehyde	Proprietary	Causes severe irritation and or burns (human)
Methanol	67-56-1	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
Hydrochloric acid	7647-01-0	Causes severe burns
Aldehyde	Proprietary	Mild eye irritant. (human) (8 % solution)
Methanol	67-56-1	Non-irritating to the eye (Rabbit)

Substances	CAS Number	Skin Sensitization
Hydrochloric acid	7647-01-0	Did not cause sensitization on laboratory animals (guinea pig)
Aldehyde	Proprietary	Skin sensitizer in guinea pig.
Methanol	67-56-1	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Hydrochloric acid	7647-01-0	No information available
Aldehyde	Proprietary	No information available
Methanol	67-56-1	No information available

Substances	CAS Number	Mutagenic Effects
Hydrochloric acid	7647-01-0	Not regarded as mutagenic.
Aldehyde	Proprietary	In vitro tests did not show mutagenic effects.
Methanol	67-56-1	The weight of evidence from available in vitro and in vivo studies indicates that this substance is not expected to be mutagenic.

Substances	CAS Number	Carcinogenic Effects
Hydrochloric acid	7647-01-0	No data of sufficient quality are available.
Aldehyde	Proprietary	No information available
Methanol	67-56-1	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/m <sup>3</sup> , 1hr.).
Aldehyde	Proprietary	Did not show teratogenic effects in animal experiments.
Methanol	67-56-1	Experiments have shown reproductive toxicity effects on laboratory animals

Substances	CAS Number	STOT - single exposure
Hydrochloric acid	7647-01-0	May cause respiratory irritation.
Aldehyde	Proprietary	No information available
Methanol	67-56-1	May cause disorder and damage to the Central Nervous System (CNS)

Substances	CAS Number	STOT - repeated exposure
Hydrochloric acid	7647-01-0	No significant toxicity observed in animal studies at concentration requiring classification.
Aldehyde	Proprietary	No significant toxicity observed in animal studies at concentration requiring classification.
Methanol	67-56-1	No data of sufficient quality are available.

Substances	CAS Number	Aspiration hazard
Hydrochloric acid	7647-01-0	Not applicable
Aldehyde	Proprietary	Not applicable
Methanol	67-56-1	Not applicable

## 12. Ecological Information

### 12.1. Toxicity

**Ecotoxicity effects**

Product is not classified as hazardous to the environment.

**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)
Aldehyde	Proprietary	EC50 0.13 mg/L (Chlorella vulgaris)	LC50 (47h) 122 mg/L (Cyprinus carpio)	IC50 (48h) 131.2 mg/L (Tetrahymena pyriformis)	LC50 (48h) 107 mg/L (Daphnia magna)
Methanol	67-56-1	EC50 (96 h) =22000 mg/L (Pseudokirchnerella subcapitata) NOEC (8 d) =8000 mg/L (Scenedesmus quadricauda)	LC50 (96 h) =15400 mg/L (Lepomis macrochirus) EC50 (200 h) =14536 mg/L (Oryzias latipes)	IC50 (3h) > 1000 mg/L (activated sludge)	EC50 (96 h) =18260 mg/L (Daphnia magna) NOEC (21 d) =208 mg/L (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.
Aldehyde	Proprietary	Predicted to be readily biodegradable.
Methanol	67-56-1	(95-97% @ 20d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Hydrochloric acid	7647-01-0	0.25
Aldehyde	Proprietary	1.83 BCF = 8 (Calculated)
Methanol	67-56-1	-0.77 BCF = 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)

**12.4. Mobility in soil**

Substances	CAS Number	Mobility
Hydrochloric acid	7647-01-0	No information available
Aldehyde	Proprietary	No information available
Methanol	67-56-1	No information available

**12.5 Other adverse effects**

No information available

**13. Disposal Considerations****13.1. Waste treatment methods****Disposal methods**

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  
**Reportable Quantity:** RQ (Hydrochloric Acid - 15153 kg.)  
**NAERG:** NAERG 157

**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  
**Reportable Quantity:** RQ (Hydrochloric Acid - 15153 kg.)  
**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  
**Reportable Quantity:** RQ (Hydrochloric Acid - 15153 kg.)

**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.

**TSCA Significant New Use Rules - S5A2**

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Hydrochloric acid	7647-01-0	Not applicable
Aldehyde	Proprietary	Not applicable
Methanol	67-56-1	Not applicable

**EPA SARA Title III Extremely Hazardous Substances**

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Hydrochloric acid	7647-01-0	5000 lb
Aldehyde	Proprietary	Not applicable
Methanol	67-56-1	Not applicable

**EPA SARA (311,312) Hazard Class**

Acute Health Hazard  
Chronic Health Hazard



**EPA SARA (313) Chemicals**

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Hydrochloric acid	7647-01-0	1.0%	Not applicable
Aldehyde	Proprietary	Not applicable	Not applicable
Methanol	67-56-1	1.0%	Not applicable

**EPA CERCLA/Superfund Reportable Spill Quantity**

Substances	CAS Number	CERCLA RQ
Hydrochloric acid	7647-01-0	5000 lb 2270 kg
Aldehyde	Proprietary	Not applicable
Methanol	67-56-1	5000 lb 2270 kg

**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** The California Proposition 65 regulations apply to this product.

**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.

**NFPA Ratings:** Health 3, Flammability 0, Reactivity 1

**HMIS Ratings:** Health 3, Flammability 0, Reactivity 1

**Canadian Regulations**

**Canadian Domestic Substances List (DSL)** Product contains one or more components not listed on the inventory.

**16. Other information****Preparation Information**

**Prepared By** Chemical Stewardship  
Telephone: 1-281-871-6107  
e-mail: fdunexchem@halliburton.com

**Revision Date:** 12-May-2016

**Reason for Revision** SDS sections updated:  
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 used in the safety data sheet**

bw – body weight

CAS – Chemical Abstracts Service

d - day

EC50 – Effective Concentration 50%  
ErC50 – Effective Concentration growth rate 50%  
h - hour  
LC50 – Lethal Concentration 50%  
LD50 – Lethal Dose 50%  
LL50 – Lethal Loading 50%  
mg/kg – milligram/kilogram  
mg/L – milligram/liter  
mg/m<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
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  
w/w - weight/weight

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)  
OSHA  
ECHA C&L

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**End of Safety Data Sheet**