

## SAFETY DATA SHEET

### ACETIC ACID

Product Trade Name:

Revision Date: 08-Apr-2015

Revision Number: 27

### 1. Identification

#### 1.1. Product Identifier

Product Trade Name: ACETIC ACID  
Synonyms: None  
Chemical Family: Organic acid  
Internal ID Code: HM001728

#### 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  
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 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Flammable liquids.	Category 3 - H226

#### 2.2. Label Elements

Hazard Pictograms

**Signal Word**

Danger

**Hazard Statements**

H226 - Flammable liquid and vapor  
 H314 - Causes severe skin burns and eye damage  
 H318 - Causes serious eye damage  
 H335 - May cause respiratory irritation

**Precautionary Statements****Prevention**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/Bond container and receiving equipment  
 P241 - Use explosion-proof electrical/ventilating/lighting/equipment  
 P242 - Use only non-sparking tools  
 P243 - Take precautionary measures against static discharge  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P271 - Use only outdoors or in a well-ventilated area  
 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 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  
 P370 + P378 - In case of fire: Use water spray for extinction

**Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up

**Disposal**

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains  
 Substances**  
 Acetic acid

**CAS Number**  
 64-19-7

**2.3 Hazards not otherwise classified**

None known

### 3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Acetic acid	64-19-7	30 - 60%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)

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, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Eyes</b>	Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.
<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. Remove contaminated clothing and launder before reuse.
<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 burns and eye damage. May cause respiratory irritation.

#### 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

Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. 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

Remove sources of ignition. Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation. Evacuate all persons from the area.

See Section 8 for additional information

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Neutralize with lime slurry, limestone, or soda ash. Contain spill with sand or other inert materials. Scoop up and remove.

**7. Handling and storage****7.1. Precautions for Safe Handling****Handling Precautions**

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**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 away from oxidizers. 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
Acetic acid	64-19-7	10 ppm	TWA: 10 ppm STEL: 15 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****Respiratory Protection**

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

**Hand Protection**

Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. ( $\geq$  0.35 mm thickness)  
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection**

Full protective chemical resistant clothing.

**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  
**Odor:** Acrid  
**Odor** No information available  
**Threshold:**

<u>Property</u> Remarks/ - Method	<u>Values</u>
<b>pH:</b>	2.9
<b>Freezing Point/Range</b>	16 °C / 62 °F
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	117 °C / 244 °F
<b>Flash Point</b>	42 °C / 109 °F PMCC
<b>Flammability (solid, gas)</b>	No data available
upper flammability limit	16%
lower flammability limit	5.4%
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	11.7 mmHg @ 20 C
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	1.05
<b>Water Solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

### 9.2. Other information

**Molecular Weight** 60.6 (g/mole)  
**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

Keep away from heat, sparks and flame.

### 10.5. Incompatible Materials

Strong alkalis.

### 10.6. Hazardous Decomposition Products

Toxic fumes. Carbon monoxide and carbon dioxide.

## 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 burns.  
**Skin Contact** Causes severe burns.  
**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
Acetic acid	64-19-7	3310 mg/kg (Rat) 600 mg/kg (Rabbit) 4960 mg/kg (Mouse)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Acetic acid	64-19-7	Corrosive to skin

Substances	CAS Number	Eye damage/irritation
Acetic acid	64-19-7	Corrosive to eyes

Substances	CAS Number	Skin Sensitization
Acetic acid	64-19-7	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Respiratory Sensitization
Acetic acid	64-19-7	No information available

Substances	CAS Number	Mutagenic Effects
Acetic acid	64-19-7	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Acetic acid	64-19-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Acetic acid	64-19-7	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
Acetic acid	64-19-7	EC50 90 mg/L (Microcystis aeruginosa) EC50 (72h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Skeletonema costatum)	LC50 79 mg/L (Pimephales promelas) LC50 75 mg/L (Pimephales promelas) LC50 (96h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Oncorhynchus mykiss)	NOEC (16h) 1150 mg/L (Pseudomonas putida)	EC50 47 mg/L (Daphnia magna) LC50 32 mg/L (Artemia salina) EC50 (48h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Daphnia magna) NOEC (21d) 31.4 - 37.9 mg/L (Daphnia magna) (reproduction)

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Acetic acid	64-19-7	Readily biodegradable (> 95% @ 28d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Acetic acid	64-19-7	-0.17 BCF = 3.16 (Calculated)

**12.4. Mobility in soil**

Substances	Mobility
Acetic acid	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:** UN2790  
**UN Proper Shipping Name:** Acetic Acid Solution  
**Transport Hazard Class(es):** 8  
**Packing Group:** III  
**Environmental Hazards:** Not applicable  
**Reportable Quantity:** RQ (Acetic Acid - 5683 kg.)  
**NAERG:** NAERG 153

**US DOT Bulk**

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**DOT (Bulk)** Not applicable

**Canadian TDG**

**UN Number:** UN2790  
**UN Proper Shipping Name:** Acetic Acid Solution  
**Transport Hazard Class(es):** 8  
**Packing Group:** III  
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number:** UN2790  
**UN Proper Shipping Name:** Acetic Acid Solution  
**Transport Hazard Class(es):** 8  
**Packing Group:** III  
**Environmental Hazards:** Not applicable  
**Reportable Quantity:** RQ (Acetic Acid - 5683 kg.)  
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number:** UN2790  
**UN Proper Shipping Name:** Acetic Acid Solution  
**Transport Hazard Class(es):** 8  
**Packing Group:** III  
**Environmental Hazards:** Not applicable  
**Reportable Quantity:** RQ (Acetic Acid - 5683 kg.)

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

**Special Precautions for User:** None

<b>15. Regulatory Information</b>
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**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  
Fire 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 1587 Gallons based on Acetic acid (CAS: 64-19-7).

**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:

Ignitability D001

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.

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<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.

## Canadian Regulations

<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.
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## 16. Other information

### Preparation Information

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

**Revision Date:** 08-Apr-2015

**Reason for Revision** Update to Format SECTION: 2 3 4 6 7 8 10 11 12 16

### 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<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
w/w - weight/weight  
d - day

### Key literature references and sources for data

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

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**End of Safety Data Sheet**