HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **BA-20 BUFFERING AGENT**

**Revision Date:** 10-Mar-2014 **Revision Number:** 17

## 1. Product and Company Identification

**Product Identifier**

**Product Trade Name:** BA-20 BUFFERING AGENT
**Synonyms:** None
**Chemical Family:** Organic acid
**Internal ID Code** HM000095

**Product Use**

**Application:** Buffer

**Manufacturer's Name and Contact Details**

**Name and Address** Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

**Emergency Telephone Number** (281) 575-5000

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

## 2. Hazard(s) Identification

**WHIMIS Classification**

**WHMIS Hazard Class** E Corrosive Material

**WHMIS Symbol(s)**

**Summary of hazards of the product**

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

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | HMIRA Registry Number | Filing Date |
|---|---|---|---|---|
| Ammonium acetate | 631-61-8 | 60 - 100% | Not applicable | Not applicable |
| Acetic acid | 64-19-7 | 10 - 30% | Not applicable | Not applicable |

## 4. First aid measures

**Description of 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.

**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.

**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.

**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.

**Most important symptoms and effects, both acute and delayed**

May cause eye and skin burns. May cause respiratory irritation

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Extinguishing media**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Special hazards arising from the substance or mixture**

**Special Exposure Hazards**

Decomposition in fire may produce toxic gases.

**Advice for firefighters**

**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**Hazardous combustion products**

Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 6. Accidental release measures

**Personal precautions and emergency producedures**

**Protective Equipment**

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

**Precautions for safe handling**

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

**Conditions for safe storage and Incompatible materials for storage**

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

## 8. Exposure Controls/Personal Protection

**Occupational Exposure Limits**

**Exposure Limits**

| Substances | CAS Number | ACGIH TLV-TWA | OSHA PEL-TWA |
|---|---|---|---|
| Ammonium acetate | 631-61-8 | Not applicable | Not applicable |
| Acetic acid | 64-19-7 | TWA: 10 ppm<br>STEL: 15 ppm | 10 ppm |

**Appropriate engineering controls**

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

**Personal Protective Equipment (PPE)**

**Respiratory Protection** Organic vapor/acid gas respirator with a dust/mist filter.
**Hand Protection** Impervious rubber gloves. Nitrile gloves. Neoprene gloves.
**Skin Protection** Rubber apron.
**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

**Information on basic physical and chemical properties**

**Physical State:** Liquid
**Odor:** Slight vinegar
**Color:** Colorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 5.45 |
| **pH Concentration of Solution:** | No information available. |
| **Freezing Point/Range** | -31 °C |
| **Melting Point/Range** | No information available |
| **Boiling Point/Range (C):** | 101 °C |
| **Flash Point/Range (C):** | No information available. °C |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | No information available. |
| **Flammability Limits in Air - Lower (%):** | No information available. |
| **Flammability Limits in Air - Upper (%):** | No information available. |
| **Evaporation Rate (Butyl Acetate=1):** | No information available. |
| **Vapor Pressure @ 20 C (mmHg):** | No information available. |
| **Vapor Density (Air=1):** | No information available. |
| **Specific Gravity @ 20 C (Water=1):** | 1.102 |
| **Solubility in Water (g/100ml):** | Miscible |
| **Solubility in other solvents** | No information available. |
| **Partition Coefficient/n-Octanol/Water:** | No information available. |
| **Decomposition Temperature (C):** | No information available. |
| **Viscosity** | No information available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**Other Information**

**Molecular Weight (g/mole):** No information available.
**VOC Content (%)** No information available

## 10. Stability and Reactivity

**Conditions of Reactivity**

**Conditions to Avoid** None anticipated
**Hazardous Polymerization:** Will Not Occur

**Chemical Stability**
Stable

**Sensitivity to Static Discharge**
Not available

**Sensitivity to Mechanical Impact**
Not available

**Incompatible materials**
Strong alkalis.

**Hazardous Decomposition Products**
Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Routes of entry**
Eye or skin contact, inhalation.

**Information on Toxicological Effects**

**Acute effects from exposure**

**Inhalation** May cause respiratory irritation.
**Eye Contact** May cause severe eye irritation. May cause eye burns.
**Skin Contact** Causes severe burns. May cause an allergic skin reaction.
**Ingestion** Causes burns of the mouth, throat and stomach.

**Chronic effects from exposure**

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Irritancy of product**

**Irritation** May cause eye burns May cause skin burns.

**Sensitization of product**

**Sensitization** Not confirmed to cause skin or respiratory sensitization.

**Mutagenicity**

Mutagenic Effects Not regarded as mutagenic

**Carcinogenicity**

Carcinogenic Effects No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, or OSHA.

**Reproductive Toxicity**

Reproductive Toxicity This product does not contain any known or suspected reproductive hazards

**Teratogenicity/embryotoxicity**

Teratogenic Not a teratogen or embroytoxin.

**Toxicologically synergistic material** Not available

**Acute Toxicity**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Ammonium acetate | 631-61-8 | 3.25 g/kg (Rat) (similar substance) | > 2000 mg/kg (Rabbit) (Similar substances) | No data available |

| | | | | |
|---|---|---|---|---|
| Acetic acid | 64-19-7 | 3310 mg/kg (Rat)<br>600 mg/kg (Rabbit)<br>4960 mg/kg (Mouse) | 1060 mg/kg ( Rabbit ) | 11.4 mg/L ( Rat ) 4 h |

## 12. Ecological Information

**Toxicity**

**Ecotoxicity Effects**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Ammonium acetate | 631-61-8 | EC50(72h) > 1000 mg/L (Skeletonema costatum) (Similar substance) | LC50(48h): 308 mg/L (Cyprinus carpio)<br>LC50(96h): 238 mg/L (Gambusia affinis)<br>NOEC(60d): 154 mg/L (mortality) (Cyprinus carpio) | EC50(16h): 7.2 g/L (Pseudomonas putida ) (Similar substance) | EC50(48h): > 919 mg/L (Daphnia magna) (Similar substance)<br>EC50(48h) > 360.89 mg/L (Daphnia magna) (Similar substance) |
| Acetic acid | 64-19-7 | EC50: 90 mg/L (Microcystis aeruginosa)<br>EC50(72h): > 1000 mg/L (>300.82 mg/L – acetate ion) (Skeletonema costatum) | LC50: 79 mg/l (Pimephales promelas)<br>LC50: 75 mg/l (Pimephales promelas)<br>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)<br>LC50: 32 mg/L (Artemia salina)<br>EC50(48h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Daphnia magna)<br>NOEC(21d): 31.4 - 37.9 mg/L (Daphnia magna) (reproduction) |

**Persistence and Degradability**

Biodegradable.

**Bioaccumlation potential**

Does not bioaccumulate

| Substances | Log Pow |
|---|---|
| Ammonium acetate | -2.79<br>BCF: 3.162 (Calculated) |
| Acetic acid | -0.17<br>BCF 3.16 (Calculated) |

**Mobility in soil**

No information available

**Results of PBT and vPvB assessment**

No information available.

**Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 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

**Canadian TDG**

**UN Number:** Not restricted.
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable

**IATA/ICAO**

**UN Number:** Not restricted.
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable

**IMDG/IMO**

**UN Number:** Not restricted.
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable

**Special Precautions for User** None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

## 15. Regulatory Information

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

### Canadian Regulations

**Canadian DSL Inventory** All components listed on inventory or are exempt.

**WHMIS Hazard Class** E Corrosive Material

**WHMIS Symbol(s)**

### US Regulations

**US TSCA Inventory** All components listed on inventory or are exempt.

## 16. Other Information

**Preparation Information**

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

**Revision Date:** 10-Mar-2014

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.

**Key or legend to abbreviations and acronyms**
WHMIS: Workplace Hazardous Materials Information System

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

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