

# SAFETY DATA SHEET

## BA-50 BUFFERING AGENT

**Product Trade Name:****Revision Date:** 12-Mar-2015**Revision Number:** 9**1. Identification****1.1. Product Identifier**

**Product Trade Name:** BA-50 BUFFERING AGENT  
**Synonyms:** None  
**Chemical Family:** Acid  
**Internal ID Code** HM000100

**1.2 Recommended use and restrictions on use**

**Application:** Buffer  
**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**

Reproductive Toxicity	Category 2 - H361
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**2.2. Label Elements****Hazard Pictograms**

**Signal Word** Warning

**Hazard Statements** H361 - Suspected of damaging fertility or the unborn child

**Precautionary Statements**

<b>Prevention</b>	P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection
<b>Response</b>	P308 + P313 - IF exposed or concerned: Get medical advice/attention
<b>Storage</b>	P405 - Store locked up
<b>Disposal</b>	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains  
Substances**  
Boric acid

**CAS Number**  
10043-35-3

### **2.3 Hazards not otherwise classified**

None known

## **3. Composition/information on Ingredients**

<b>Substances</b>	<b>CAS Number</b>	<b>PERCENT (w/w)</b>	<b>GHS Classification - US</b>
Boric acid	10043-35-3	60 - 100%	Repr. 2 (H361)

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>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation persists.
<b>Ingestion</b>	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

### **4.2 Most important symptoms/effects, acute and delayed**

May cause birth defects.

### **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**

All standard fire fighting media

#### **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.

### 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. Avoid creating and breathing dust.

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

Scoop up and remove.

## 7. Handling and storage

### 7.1. Precautions for Safe Handling

#### Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage Information

Store in a cool, dry location.

## 8. Exposure Controls/Personal Protection

### 8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Boric acid	10043-35-3	Not applicable	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>

### 8.2 Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area.

### 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** Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

**Physical State:** Solid

**Color:**

White

<b>Odor:</b>	Odorless	<b>Odor Threshold:</b>	No information available
<u>Property</u>		<u>Values</u>	
<u>Remarks/ - Method</u>			
<b>pH:</b>		5.1	
<b>Freezing Point/Range</b>		No information available.	
<b>Melting Point/Range</b>		No data available	
<b>Boiling Point/Range</b>		No data available	
<b>Flash Point</b>		No data available	
<b>Flammability (solid, gas)</b>		No data available	
upper flammability limit		No data available	
lower flammability limit		No data available	
<b>Evaporation rate</b>		No data available	
<b>Vapor Pressure</b>		No data available	
<b>Vapor Density</b>		No data available	
<b>Specific Gravity</b>		1.84	
<b>Water Solubility</b>		Soluble in water	
<b>Solubility in other solvents</b>		No data available	
<b>Partition coefficient: n-octanol/water</b>		- 1.09	
<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	
<b>9.2. Other information</b>			
<u>Molecular Weight</u>		69.619 g/mol	
<u>VOC Content (%)</u>		Not applicable.	

## 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. Potassium. Anhydrides.

### 10.6. Hazardous Decomposition Products

None known.

## 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**

<b>Inhalation</b>	May cause mild respiratory irritation.
<b>Eye Contact</b>	May cause eye irritation.
<b>Skin Contact</b>	May cause skin irritation.
<b>Ingestion</b>	May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause reproductive system damage.  
Prolonged or repeated exposure may cause embryo and fetus toxicity. There is no evidence of carcinogenicity for the middle distillates present in this product.

**11.3 Toxicity data** > 2 mg/L (rat, 4hrs)**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Boric acid	10043-35-3	2660 mg/kg (Rat) 3450 mg/kg (Mouse)	2000 mg/kg (Rabbit)	0.16 mg/L (Rat) 4h > 2 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Boric acid	10043-35-3	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Boric acid	10043-35-3	Non-irritating to rabbit's eye

Substances	CAS Number	Skin Sensitization
Boric acid	10043-35-3	Did not cause sensitization on laboratory animals

Substances	CAS Number	Respiratory Sensitization
Boric acid	10043-35-3	No information available

Substances	CAS Number	Mutagenic Effects
Boric acid	10043-35-3	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Boric acid	10043-35-3	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Boric acid	10043-35-3	Prolonged or repeated exposure may cause reproductive system damage.

Substances	CAS Number	STOT - single exposure
Boric acid	10043-35-3	No information available

Substances	CAS Number	STOT - repeated exposure
Boric acid	10043-35-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Boric acid	10043-35-3	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
Boric acid	10043-35-3	No information available	LC50 1020 mg/L (Carassius auratus) LC50 (96h) 600 - 725 mg/L (Oncorhynchus tshawytscha) LC50 (96h) 447 - 600 mg/L (Oncorhynchus kisutch)	No information available	EC50 (48h) 115-153 mg/L (Daphnia magna)

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Boric acid	10043-35-3	No information available

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Boric acid	10043-35-3	-1.09

**12.4. Mobility in soil**

Substances	Mobility
Boric acid	No information available

**12.5 Other adverse effects**

No information available

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

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

**14. Transport Information****US DOT**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**US DOT Bulk**

**DOT (Bulk)** Not applicable

**Canadian TDG**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**IMDG/IMO**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

**IATA/ICAO**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
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	Chronic 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	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

**Canadian Regulations**

Canadian DSL Inventory	All components listed on inventory or are exempt.
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**16. Other information****Preparation Information**

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**Revision Date:** 12-Mar-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<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**