

SAFETY DATA SHEET

BA-2 BUFFERING AGENT

Product Trade Name:

Revision Date: 12-Mar-2015

Revision Number: 9

1. Identification

1.1. Product Identifier

Product Trade Name: BA-2 BUFFERING AGENT
Synonyms: None
Chemical Family: Acid
Internal ID Code: HM000094

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

Acute Oral Toxicity	Category 4 - H302
Skin Corrosion / Irritation	Category 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Acute Aquatic Toxicity	Acute 3 - H402

2.2. Label Elements

Hazard Pictograms



Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage
 H402 - Harmful to aquatic life

Precautionary Statements**Prevention**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P273 - Avoid release to the environment
 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
 P391 - Collect spillage

Storage

P405 - Store locked up

Disposal

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

**Contains
 Substances**
 Sulfamic acid

CAS Number
 5329-14-6

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Sulfamic acid	5329-14-6	60 - 100%	Acute Tox. 4 (H302) Skin Corr. 1C (H314) Eye Corr. 1 (H318) Aquatic Acute 3 (H402)

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

Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

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.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

May cause eye and skin burns. May cause eye and skin irritation. Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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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. 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. 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. Wash hands after use. 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, dry location.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Sulfamic acid	5329-14-6	Not applicable	Not applicable

8.2 Appropriate engineering controls**Engineering Controls** Use in a well ventilated area.**8.3 Individual protection measures, such as personal protective equipment**

Respiratory Protection	Dust/mist respirator. (N95, P2/P3)
Hand Protection	Impervious rubber 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**9.1. Information on basic physical and chemical properties**

Physical State: Solid	Color: White
Odor: Odorless	Odor No information available
	Threshold:

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	1.18
Freezing Point/Range	No information available.
Melting Point/Range	No data available
Boiling Point/Range	No data available
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	No data available
Vapor Density	No data available
Specific Gravity	2.125
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	97.1
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. Strong oxidizers. Chlorine. Sulfides. Nitrites. Nitrates. Carbonates of alkalis.

10.6. Hazardous Decomposition Products

Oxides of sulfur. Oxides of nitrogen. Ammonia. 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	May cause respiratory irritation.
Eye Contact	Causes severe eye burns. May cause permanent eye damage.
Skin Contact	May cause skin irritation.
Ingestion	May cause abdominal pain, vomiting, nausea, and diarrhea. Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfamic acid	5329-14-6	1450 mg/kg (Rat) 1600 mg/kg (Rat) 3160 mg/kg (Rat) 2065 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available

Substances	CAS Number	Skin corrosion/irritation
Sulfamic acid	5329-14-6	Skin, rabbit: Causes burns

Substances	CAS Number	Eye damage/irritation
Sulfamic acid	5329-14-6	Eye, rabbit: Causes serious eye damage

Substances	CAS Number	Skin Sensitization
Sulfamic acid	5329-14-6	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Sulfamic acid	5329-14-6	No information available

Substances	CAS Number	Mutagenic Effects
Sulfamic acid	5329-14-6	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Sulfamic acid	5329-14-6	No information available.

Substances	CAS Number	Reproductive toxicity
Sulfamic acid	5329-14-6	No information available

Substances	CAS Number	STOT - single exposure
Sulfamic acid	5329-14-6	No data of sufficient quality are available.

Substances	CAS Number	STOT - repeated exposure
Sulfamic acid	5329-14-6	No data of sufficient quality are available.

Substances	CAS Number	Aspiration hazard
Sulfamic acid	5329-14-6	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
Sulfamic acid	5329-14-6	EC50 (72h) 48 mg/L (Desmodesmus subspicatus) EC50 (72h) 1801.43 mg/L (Skeletonema costatum)	LC50 (96h) 70.3 mg/L (Pimephales promelas) LC50 (96h) >602 mg/L (Scophthalmus maximus)	EC50 (3h) >200 mg/L (Activated sludge)	EC50 (48h) 71.6 mg/L (Daphnia magna) LC50 (48h) 602 mg/L (Acartia tonsa)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sulfamic acid	5329-14-6	(0% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sulfamic acid	5329-14-6	No information available

12.4. Mobility in soil

Substances	Mobility
Sulfamic acid	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method

Contaminated Packaging

Bury in a licensed landfill according to federal, state, and local regulations.
This bag may contain residue of a hazardous material. Some authorities may regulate such containers as hazardous waste. Dispose of container according to national or local regulations.

14. Transport Information

US DOT

UN Number: UN2967
UN Proper Shipping Name: Sulfamic Acid
Transport Hazard Class(es): 8
Packing Group: III
Environmental Hazards: Not applicable
NAERG: NAERG 154

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN2967
UN Proper Shipping Name: Sulfamic Acid
Transport Hazard Class(es): 8
Packing Group: III
Environmental Hazards: Not applicable

IMDG/IMO

UN Number: UN2967
UN Proper Shipping Name: Sulfamic Acid
Transport Hazard Class(es): 8
Packing Group: III
Environmental Hazards: Not applicable
EMS: EmS F-A, S-B

IATA/ICAO

UN Number: UN2967
UN Proper Shipping Name: Sulfamic Acid
Transport Hazard Class(es): 8
Packing Group: III
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 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	One or more components listed.
PA Right-to-Know Law	Does not apply.
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
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Revision Date:	12-Mar-2015
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Reason for Revision	Update to Format SECTION: 2
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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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

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End of Safety Data Sheet