

MATERIAL SAFETY DATA SHEET

Product Trade Name: **ABF**

Revision Date: 15-Apr-2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: ABF
Synonyms: None
Chemical Family: Fluoride
Application: Additive

Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium bifluoride	1341-49-7	60 - 100%	2.5 mg/m ³	2.5 mg/m ³

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory burns. May be harmful if swallowed. May damage bones.

4. 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.

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.

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.

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.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Not Determined
Flash Point/Range (C): Not Determined
Flash Point Method: Not Determined
Autoignition Temperature (F): Not Determined
Autoignition Temperature (C): Not Determined
Flammability Limits in Air - Lower (%): Not Determined
Flammability Limits in Air - Upper (%): Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

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

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 3, Flammability 0, Reactivity 0
HMIS Ratings: Health 3, Flammability 0, Physical Hazard 0 , PPE: H

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from acids. Store away from alkalis. Store in a cool, dry location. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Localized ventilation should be used to control dust levels.

Respiratory Protection HEPA Respirator.

Hand Protection Butyl 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

Physical State:	Solid
Color:	White
Odor:	Acrid
pH:	1
Specific Gravity @ 20 C (Water=1):	1.5
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	43.7
Boiling Point/Range (F):	463
Boiling Point/Range (C):	239
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	0
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	57.05

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong acids. Strong alkalis.
Hazardous Decomposition Products	Ammonia. Hydrogen fluoride.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure**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. May cause damage to bones and teeth.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may result in fluorosis. Symptoms include nausea, vomiting, loss of appetite, diarrhea, and/or constipation. Fluorosis also results in bone density increase.

LD50 Oral: 130 mg/kg; (rat)

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium bifluoride	1341-49-7	130 mg/kg (Rat)	No data available	No data available

Test species: Rat

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Ammonium bifluoride	1341-49-7	LC50(72): 369.9 (Skeletonema costatum)	LC50(96): 173 mg/l (Scophthalmus maximus)	No information available	No information available

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging 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

Land Transportation

DOT

UN1727, Ammonium Hydrogendifluoride, Solid , 8 , II
RQ (Ammonium Bifluoride - 45.4 kg.)
NAERG 154

Canadian TDG

Ammonium Hydrogendifluoride, Solid , 8 , UN1727 , II

ADR

UN1727, Ammonium Hydrogendifluoride, Solid , 8 , II

Air Transportation

ICAO/IATA

UN1727, Ammonium Hydrogendifluoride, Solid , 8 , II
RQ (Ammonium Bifluoride - 45.4 kg.)

Sea Transportation

IMDG

UN1727, Ammonium Hydrogendifluoride, Solid , 8 , II RQ (Ammonium Bifluoride - 45.4 kg.)
EmS F-A, S-B

Other Transportation Information

Labels: Corrosive

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 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	EPA Reportable Spill Quantity is 100 Pounds based on Ammonium bifluoride (CAS: 1341-49-7).
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	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.

Canadian Regulations

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

WHMIS Hazard Class E Corrosive Material
D1B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS

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.

Disclaimer Statement

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