

MATERIAL SAFETY DATA SHEET

Product Trade Name: AMMONIUM PERSULFATE

Revision Date: 25-Aug-2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: AMMONIUM PERSULFATE
Synonyms: None
Chemical Family: Oxidant
Application: Breaker

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

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium persulfate	7727-54-0	60 - 100%	0.1 mg/m ³	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory irritation. May be harmful if swallowed. May cause allergic skin and respiratory reaction. Oxidizer.

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 Oxidizer. May ignite combustibles. 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 1, Flammability 1, Reactivity 3
HMS Ratings: Health 1, Flammability 1, Reactivity 3

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 reducing agents. Store away from combustibles. Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Respiratory Protection Dust/mist respirator. (N95, P2/P3)

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Dust proof goggles.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White to light straw
Odor:	Mild acrid
pH:	5
Specific Gravity @ 20 C (Water=1):	1.98
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	56.40
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
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):	79
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):	228.22

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Avoid contact with readily oxidizable materials.
Incompatibility (Materials to Avoid)	Organic matter. All flammables, especially petroleum products, asphalt & other volatile flammables. Strong acids. Avoid halogens. Amphoteric metals such as aluminum, magnesium, lead, tin, or zinc.
Hazardous Decomposition Products	Toxic fumes. Ammonia. Sulfuric acid.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Symptoms related to exposure	
Acute Toxicity	
Inhalation	May cause respiratory irritation. May cause allergic respiratory reaction.
Eye Contact	May cause eye irritation
Skin Contact	May cause skin irritation. May cause an allergic skin reaction.
Ingestion	Causes burns of the mouth, throat and stomach.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Ammonium persulfate	7727-54-0	495 mg/kg (Rat) 700-742 mg/kg (Rat)	> 2,000 mg/kg (Rat)	520 mg/L (Rat, 1h) \par >= 2.95 mg/L (Rat, 4h)
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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 persulfate	7727-54-0	EC50(72h): 320 mg/L (Phaeodactylum tricornutum)	LC50(96h): 103 mg/l (Lepomis macrochirus) LC50(96h): 77.3 mg/L (Oncorhynchus mykiss) LC50(96h): 107.6 mg/L (Scophthalmus maximus)	No information available	EC50(48h): 120 mg/L (Daphnia magna) NOEC(5d): 11 mg/L (Abra alba)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Ammonium persulfate	7727-54-0	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No information available

Substances	CAS Number	Log Pow
Ammonium persulfate	7727-54-0	No information available

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 Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

US DOT

UN Number:	UN1444
UN Proper Shipping Name:	Ammonium Persulfate
Transport Hazard Class(es):	5.1
Packing Group:	III
NAERG:	NAERG 140

US DOT Bulk

DOT (Bulk) Not Applicable

Canadian TDG ul0

UN Number: UN1444
UN Proper Shipping Name: Ammonium Persulfate
Transport Hazard Class(es): 5.1
Packing Group: III

IMDG/IMO

UN Number: UN1444
UN Proper Shipping Name: Ammonium Persulfate
Transport Hazard Class(es): 5.1
Packing Group: III
EMS: EmS F-A, S-Q

IATA/ICAO

UN Number: UN1444
UN Proper Shipping Name: Ammonium Persulfate
Transport Hazard Class(es): 5.1
Packing Group: III

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

Special Precautions for User: None

Labels: Oxidizer

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 Reactive Hazard
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 Not applicable.

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.

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.
WHMIS Hazard Class	C Oxidizing Materials D2B 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.

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