



## Safety Data Sheet Ammonium Persulfate

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### SECTION 1: Identification

#### 1.1 Product identifier

Product name	Ammonium Persulfate
Product number	PolyBreak AP

#### 1.3 Recommended use of the chemical and restrictions on use

For industrial use. Polymer breaker.

#### 1.4 Supplier's details

Name	Downhole Chemical Solutions
Address	1 Cowboys Way #572 Frisco Texas 75034
Telephone	469-466-1100

#### 1.5 Emergency phone number(s)

1-888-255-3924 US (ChemTel)  
1-813-248-0585 International (ChemTel)

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### SECTION 2: Hazard identification

#### 2.1 Classification of the substance or mixture

**GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)**

- Acute toxicity, oral, Cat. 4
- Skin corrosion/irritation, Cat. 2
- Serious eye damage/eye irritation, Cat. 2B
- Respiratory sensitizer, Cat. 1
- Skin sensitizer, Cat. 1
- Specific target organ toxicity following single exposure, Cat. 3
- Oxidizing solids, Cat. 3

GHS Label elements, including precautionary statements

## EMERGENCY OVERVIEW

**Danger****Hazard Statements**

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

H320 - Causes eye irritation

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H302 - Harmful if swallowed

H272 - May intensify fire; oxidizer

**Precautionary Statements - Prevention**

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P285 - In case of inadequate ventilation wear respiratory protection

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/ protective clothing

P264 - Wash face, hands and any exposed skin thoroughly after handling

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P220 - Keep/Store away from clothing/combustible materials

P221 - Take any precaution to avoid mixing with combustibles

**Precautionary Statements - Response**

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/ attention

P302 + P352 - IF ON SKIN: Wash with plenty of water.

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P330 - Rinse mouth

P370 + P378 - In case of fire: Use water for extinction

**Precautionary Statements - Storage**

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information** Risk of decomposition by heat or by contact with incompatible materials

**Unknown acute toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity

**3. COMPOSITION/INFORMATION ON INGREDIENTS**Formula H<sub>8</sub>N<sub>2</sub>O<sub>8</sub>S<sub>2</sub>

Chemical name	CAS-No	Weight %
Ammonium Persulfate	7727-54-0	>98

**4. FIRST AID MEASURES**

<b>General Advice</b>	Remove from exposure, lie down. Show this material safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids intermittently. Consult a physician. In case of contact, immediately flush eyes with plenty of water. If symptoms persist, call a physician.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth. Drink 1 or 2 glasses of water.
<b>Most important symptoms and effects, both acute and delayed</b>	Itching; Redness; Coughing and/ or wheezing.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Treat symptomatically

**5. FIRE-FIGHTING MEASURES**

<b>Suitable Extinguishing Media</b>	Water. Cool containers with flooding quantities of water until well after fire is out.
<b>Unsuitable extinguishing media</b>	Do not use carbon dioxide or other gas filled fire extinguishers; they will have little effect on decomposing persulfate.
<b>Specific Hazards Arising from the Chemical</b>	Decomposes under fire conditions to release oxygen that intensifies the fire.
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	Not sensitive.
<b>Sensitivity to Static Discharge</b>	Not sensitive.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Keep off any unprotected persons. Avoid contact with the skin and the eyes. Avoid breathing dust. Wear personal protective equipment.
<b>Other</b>	Never add other substances or combustible waste to product residues.
<b>Environmental Precautions</b>	Knock down dust with water spray. Avoid penetration into waterways, sewers, soil or groundwater. Local authorities should be advised if significant spillages cannot be contained.

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**Methods for Containment** Vacuum, shovel or pump waste into a drum and label contents for disposal. Avoid dust formation. Store in closed container.

**Methods for cleaning up** Clean up spill area and treat as special waste. Dispose of waste as indicated in Section 13.

## 7. HANDLING AND STORAGE

**Handling** Wear personal protective equipment. Avoid breathing dust. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with skin and eyes. Remove and wash contaminated clothing before re-use.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Do not store near combustible materials. Avoid contamination of opened product. Keep away from food, drink and animal feedingstuffs. Avoid formation and deposition of dust.

**Incompatible products** Acids. Bases, Halides, Oxidizing agents, Strong reducing agents, Combustible materials.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Ammonium Persulfate 7727-54-0	TWA: 0.1 mg/m <sup>3</sup>	-	-	-
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Ammonium Persulfate 7727-54-0	TWA: 0.1 mg/m <sup>3</sup>	-	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>

### Appropriate engineering controls

**Engineering measures** Provide local exhaust or general ventilation adequate to maintain exposures below permissible exposure limits.

### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** Eye protection recommended. Chemical goggles consistent with EN 166 or equivalent.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection** Protective gloves: Neoprene gloves, Polyvinylchloride, Natural Rubber.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn: particulate filtering facepiece respirators.

**Hygiene measures** Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Wash hands before breaks and after shifts. Keep work clothes separate, remove contaminated clothing - launder after open handling of product.

**General information** Protective engineering solutions should be implemented and in use before personal protective equipment is considered.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Appearance** Crystalline solid  
**Physical State** Solid  
**Color** White  
**Odor** odorless

<b>Odor threshold</b>	Not applicable
<b>pH</b>	5.2 (1% solution)
<b>Melting point/freezing point</b>	120 °C (Decomposes)
<b>Boiling Point/Range</b>	Decomposes on heating
<b>Flash point</b>	Not applicable
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	Not flammable
<b>Flammability Limit in Air</b>	Not applicable
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	1.47E-23 mm Hg at 25°C
<b>Vapor density</b>	No information available
<b>Density</b>	1.98 g/cm <sup>3</sup> (crystal density)
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	600 g/l @ 25 °C
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No evidence of combustion up to 600°C
<b>Decomposition temperature</b>	> >100 °C (assume)
<b>Viscosity, kinematic</b>	No information available (Solid)
<b>Viscosity, dynamic</b>	No information available
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	oxidizer
<b>Molecular weight</b>	228.2
<b>Bulk density</b>	1.05 g/cm <sup>3</sup> (loose)

**10. STABILITY AND REACTIVITY**

<b>Reactivity</b>	Strong oxidizer.
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	Use of persulfates in chemical reactions requires appropriate precautions and design considerations for pressure and thermal relief.  Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated.  Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat. (decomposes at 275 °C); Moisture.
<b>Incompatible materials</b>	Bases, Halides, Oxidizing agents, Strong reducing agents, Combustible materials. Acids.
<b>Hazardous Decomposition Products</b>	Oxygen which supports combustion; Sulfur oxides.

**11. TOXICOLOGICAL INFORMATION**

**Product Information**

<b>Unknown acute toxicity</b>	0% of the mixture consists of ingredient(s) of unknown toxicity
<b>LD50 Oral</b>	740 mg/kg (rat) (Ammonium Persulfate)
<b>LD50 Dermal</b>	> 2000 mg/kg (rat) (Ammonium Persulfate)
<b>LC50 Inhalation</b>	> 2.95 mg/L (rat) (4-hr) (Ammonium Persulfate)
<b>Serious eye damage/eye irritation</b>	Irritating to eyes.
<b>Skin corrosion/irritation</b>	Minimally irritating.

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**Sensitization** Sensitizing to skin and respiratory system.

## Information on toxicological effects

**Symptoms** Symptoms of allergic reaction may include rash, itching, swelling and trouble breathing.

## Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Carcinogenicity** Did not show carcinogenic effects in animal experiments.

**Mutagenicity** In vivo tests did not show mutagenic effects.

**Reproductive toxicity** This product is not recognized as reprotox by Research Agencies.

**STOT - single exposure** May cause respiratory irritation.  
**STOT - repeated exposure** Not classified.  
**Subchronic toxicity** Oral (NOAEL) = 41.1 mg/kg bw (Ammonium Persulfate)  
Inhalation (NOAEC) = 10.3 mg/m<sup>3</sup> (Ammonium Persulfate)  
Dermal: No data available

**Target organ effects** Eyes, Skin, Respiratory System.

**Aspiration hazard** No information available.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Ecotoxicity effects

<b>Ammonium Persulfate (7727-54-0)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Ammonium Persulfate	96 h LC50	Onchorhyncus mykiss	76.3	mg/L
Ammonium Persulfate	48 h EC50	Water flea	120	mg/L
Ammonium Persulfate	72 h EC50	Marine algae (Phaeodactylum tricornutum)	136	mg/L
Ammonium Persulfate	96 h LC50	Turbot (Scophthalmus maximus)	107.6	mg/L
Ammonium Persulfate	18 h EC10	Pseudonomas putida	36	mg/L
Ammonium Persulfate	5 d	Abra Alba	11	mg/L
Ammonium Persulfate	96 h LC50	Grass shrimp	391	mg/L
Ammonium Persulfate	24 h EC50	Daphnia magna	635.7	mg/L

**Persistence and degradability** Biodegradability does not pertain to inorganic substances.

**Bioaccumulation** Does not bioaccumulate.

**Mobility** Dissociates into ions.

**Other Adverse Effects** None known.

## 13. DISPOSAL CONSIDERATIONS

**Waste disposal methods** This material, as supplied, is a hazardous waste according to federal regulations (40 CFR

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261). It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

**US EPA Waste Number** D001

**Contaminated Packaging** Dispose of in accordance with local regulations.

## 14. TRANSPORT INFORMATION

### DOT

**UN/ID no** 1444  
**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

### TDG

**UN/ID no** 1444  
**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

### ICAO/IATA

**UN/ID no** 1444  
**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

### IMDG/IMO

**UN/ID no** 1444  
**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

### ADR/RID

**UN/ID no** 1444  
**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

### ADN

**Proper Shipping Name** AMMONIUM PERSULFATE  
**Hazard class** 5.1  
**Packing Group** III

**OTHER INFORMATION** Protect from physical damage. Do not store near acids, moisture or heat.

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic health hazard</b>	No
<b>Fire hazard</b>	Yes
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

#### **Clean Water Act**

