

## MATERIAL SAFETY DATA SHEET

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Version 1.9

## Section 1 - Product and Company Information

Product Name	AMMONIUM PERSULFATE, 98+%, A.C.S.
	REAGEN T
Product Number	248614
Brand	SIAL
Company	Sigma-Aldrich
Address	3050 Spruce Street
	SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
PEROXYDISULFURIC ACID, DIAMMONIUM	7727-54-0	No
SALT		
Formula	(NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	
Synonyms	Ammonium peroxydisulfate * Diammonium peroxydisulfate * Diammonium peroxydisulphate * Diammonium persulfate * Persulfate d'ammonium (French) * ammonium peroxodisulfate	
RTECS Number:	SE0350000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Oxidizing. Harmful.

Contact with combustible material may cause fire. Irritating to eyes, respiratory system and skin. Harmful in contact with skin and if swallowed. May cause sensitization by inhalation and skin contact.

## HMIS RATING

HEALTH: 3\*

FLAMMABILITY: 0

REACTIVITY: 3

## NFPA RATING

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 3

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### EXPLOSION HAZARDS

Container explosion may occur under fire conditions.

#### CONDITIONS OF FLAMMABILITY

Vigorously supports combustion.

#### FLASH POINT

N/A

#### AUTOIGNITION TEMP

N/A

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.  
Contact with other material may cause fire. May accelerate combustion.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

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### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame.

#### SPECIAL REQUIREMENTS

Moisture sensitive.

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### Section 8 - Exposure Controls / PPE

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#### ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Remove and wash contaminated clothing promptly.

#### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.1 MG/M3

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### Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid
	Color: White
	Form: Powder

Property	Value	At Temperature or Pressure
Molecular Weight	228.2 AMU	
pH	1.0 - 2.0	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	7.9 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.98 g/cm3	
Bulk Density	900 kg/l	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	

Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	Solubility in Water:complete, colorless 1 M in H2O, 20°C

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Strong reducing agents, Organic materials, Finely powdered metals.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nitrogen oxides, Sulfur oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

### SENSITIZATION

Sensitization: May cause allergic reaction.

### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### TOXICITY DATA

Skin

Rat

2,000 mg/kg

LD50

Oral

Rat

689 mg/kg

LD50

### IRRITATION DATA

Eyes

Rabbit

Remarks: No irritation effect

Skin

Rabbit

Remarks: No irritation effect

CHRONIC EXPOSURE - MUTAGEN  
Mutation test: Histidine reversion (Ames)

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## Section 12 - Ecological Information

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### ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish  
Species: Poecilia reticulata  
Time: 96 h  
Value: 323 mg/l

Test Type: LC50 Fish  
Species: Onchorhynchus mykiss (Rainbow trout)  
Time: 96 h  
Value: 76 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 120 mg/l

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Ammonium persulfate  
UN#: 1444  
Class: 5.1  
Packing Group: Packing Group III  
Hazard Label: Oxidizer  
PIH: Not PIH

### IATA

Proper Shipping Name: Ammonium persulphate  
IATA UN Number: 1444  
Hazard Class: 5.1  
Packing Group: III

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: O-Xn  
Indication of Danger: Oxidizing. Harmful.  
R: 8-22-36/37/38-42/43  
Risk Statements: Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.  
S: 22-24-26-37  
Safety Statements: Do not breathe dust. Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Oxidizing. Harmful.

Risk Statements: Contact with combustible material may cause fire. Irritating to eyes, respiratory system and skin. Harmful in contact with skin and if swallowed. May cause sensitization by inhalation and skin contact.

Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.