

**MATERIAL SAFETY DATA SHEET****AMMONIUM PERSULPHATE**

PRODUCT CODE NUMBER(S): 1560-1

**PRODUCT IDENTIFICATION****Chemical Name and Synonyms:** *Ammonium persulphate; Ammonium peroxydisulphate***Chemical Family:** *Inorganic ammonium compound***Chemical Formula:**  $(NH_4)_2S_2O_8$ **Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.  
40 Armstrong Avenue  
Georgetown, Ontario L7G 4R9***Telephone No:** (905) 877-0101**Fax No:** (905) 877-6666**Emergency Telephone No:** CANUTEC (613) 996-6666**HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Ammonium persulphate</i>	<i>~98</i>	<i>0.1 mg/m<sup>3</sup> (TWA persulphates)</i>	<i>7727-54-0</i>

**PHYSICAL DATA****Physical State:** *Solid***Odour and Appearance:** *White, granular crystals or powder, odourless.***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *Not available***Vapour Density (Air = 1):** *Not available***Evaporation Rate:** *Not available***Boiling Point (degrees C):** *Not available***Melting Point (degrees C):** *120°C (decomposes)***pH:** *Not available***Specific Gravity:** *1.98 @ 20°C***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *1444***T.D.G. Class:** *5.1***Pkg. Group:** *III***REACTIVITY DATA****Chemical Stability:** *Stable***Incompatibility with other substances:** *May react violently or explosively with acids, reducing agents, aluminum powder, ammonia, silver nitrate mixtures, iron, ammonium zinc mixtures. Mixtures with powdered Al may explode. Mixture with sodium peroxide explodes on grinding in mortar. Moisture will cause loss of O<sub>2</sub>. Decomposes at melting point.***Reactivity:** *Avoid heat, sparks, open flame, shock, and friction. Keep away from all combustible or incompatible materials. Avoid generation of dust.***Hazardous Decomposition Products:** *SO<sub>x</sub>, NO<sub>x</sub>***FIRE AND EXPLOSION DATA****Flammability:** *Not combustible but strong oxidizer. Will enhance the burning rate or cause spontaneous combustion of organic or combustible material. Forms flammable, explosive or shock-sensitive mixtures with many materials (see "Incompatibility with other Substances"), therefore is a serious fire and explosion risk. Strong oxidants may explode when shocked or if exposed to heat, flame or friction. May be initiation source for dust or vapour explosions.***Extinguishing Media:** *Use flooding amounts of water to blanket fire, cool exposed containers, and to flush solid or vapours away from fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment and clothing (chemical-resistant splash suit, Bunker Gear is not adequate) sufficient to prevent inhalation of fumes and contact with skin and eyes. Remove all flammable and combustible materials from area, if it is safe to do so. Do not attempt to approach heated containers until they have cooled, and then wear protective equipment; decomposition products are hazardous to health.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Toxic, irritating SO<sub>x</sub>, NO<sub>x</sub>, ammonia, sulphuric acid.***Sensitivity to Impact:** *May be sensitive***Sensitivity to Static discharge:** *Mixtures of dust with air may be sensitive under certain conditions, particularly when contaminated with organic materials, when exposed to electrostatic or other high-voltage spark, or other ignition source.***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:** *(oral, rat) 600 mg/kg, (dermal, rabbit) >2,000 mg/kg***LC<sub>50</sub>:** *(rat) 2.95 mg/L/4h***Effects of Acute Exposure to Product:****Inhaled:** *May cause irritation to upper respiratory tract with coughing, choking, shortness of breath. Severe overexposure can cause lung damage, chemical pneumonitis or pulmonary edema and even death.***In contact with skin:** *May cause slight irritation. May cause skin sensitization in some individuals. Not expected to be absorbed in significant amounts.***In contact with eyes:** *May cause irritation, conjunctivitis, reddening of eyelids.***Ingested:** *May cause irritation to mouth and stomach with nausea and vomiting, abdominal pain.***Effects of Chronic Exposure to Product:***Prolonged or repeated inhalation may cause asthmatic bronchitis. Prolonged or repeated skin contact may cause allergic dermatitis in sensitive individuals.***Carcinogenicity:** *No information available*

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**Teratogenicity:** No information available**Reproductive Effects:** No information available**Mutagenicity:** No information available**Synergistic Products:** None known

## PREVENTIVE MEASURES

**Engineering Controls:** Local exhaust ventilation recommended.**Respiratory Protection:** Dust mask. If dust or mist is present, NIOSH-approved half-face dust/mist respirator. High or unknown concentrations, as in fire or spill conditions: full facepiece, positive pressure supplied-air respirator.**Eye Protection:** Chemical safety goggles**Skin Protection:** Chemical resistant (neoprene or rubber) gloves. Other protective clothing, apron, sleeves, coveralls, boots as required to prevent contact.**Other Personal Protective Equipment:** Safety shower and eye-wash fountain in work area.**Leak and Spill Procedure:** Evacuate area. Cleanup personnel must be thoroughly trained in the handling of hazardous chemicals, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or vapours and contact with skin and eyes. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Do not touch spilled material. Mix with wet sand, transfer carefully to clean, dry container and arrange removal by disposals company. Handle contaminated material with the same caution as you do the chemical itself. Site of spillage should be washed thoroughly to remove all traces of oxidant.**Waste Disposal:** Follow all federal, provincial and local regulations for disposal.**Handling Procedures and Equipment:** OXIDIZER. Workers using this chemical must be thoroughly trained in its hazards and its safe use. Keep away from combustible or organic materials, and all sources of ignition. Use non-sparking tools and equipment. Avoid contact and inhalation of dust or mist. Protect against physical damage or shock. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous, particularly combustible, materials. Keep containers closed when not in use and when empty. Wash thoroughly after handling. Empty containers may contain hazardous residues; treat with caution.**Storage Requirements:** Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible, combustible or organic materials. Storage facilities (shelves, floors) should be constructed of non-combustible materials. Keep away from all ignition sources. Keep containers tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking; unattended spillage onto combustible materials (wood, paper, etc.) could result in fire.

## FIRST AID MEASURES

### Specific Measures:

**Eyes:** Immediately flush eyes with running water for ten to twenty (10-20) minutes, holding eyelids open during flushing, until no trace of chemical remains. Take care not to flush contaminated water into unaffected eye. Get medical attention.**Skin:** Remove contaminated clothing (including shoes, belts, watches, rings). Wipe off excess from skin. Flush skin with running water until no trace of chemical remains. Get medical attention if irritation persists. Decontaminate clothing before

reuse. Do not discard without washing; clothing contaminated with this chemical can burn spontaneously.

**Inhalation:** Move victim to fresh air. Give oxygen and get medical attention for any breathing difficulty. Give artificial respiration ONLY if breathing has stopped. Get medical advice immediately.**Ingestion:** If victim is alert and not convulsing, rinse mouth thoroughly with water and give 2 to 4 glasses of water to drink to dilute. Get medical attention. Induce vomiting as directed by medical personnel. If spontaneous vomiting occurs, hold head low to prevent aspiration of vomitus, rinse mouth thoroughly and give more water to drink.

## REFERENCES USED

CCINFO disc: Cheminfo

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Suppliers' Material Safety Data Sheets

## ADDITIONAL INFORMATION

**Date Issued:** May 6, 1991**Revision:** June 2009**MSDS:** 1560-1**Proposed WHMIS Designation:** C; D1B; D2B (irritant)

Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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