

Material Safety Data Sheet

Material Name: Sodium Persulfate

ID: C1-180

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Sodium Persulfate

Product Use: For Commercial Use, Not To Be Used As A Pesticide

Synonyms: Peroxydisulfuric Acid, Disodium Salt; Disodium Peroxodisulphate; Disodium Peroxodisulfate; Disodium Peroxydisulfate; Disodium Persulfate; Sodium Peroxodisulfate; Sodium Peroxydisulfate

Supplier Information

Chem One Ltd.

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Houston, Texas 77040-6519

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Fax: (713) 896-7540

Emergency # (800) 424-9300 or (703) 527-3887

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7775-27-1	Sodium Persulfate	90-100%

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview

Sodium Persulfate is an odorless, white solid in crystalline powder form. The primary health hazard associated with this product is the potential for irritation of the eyes, skin, nose and other tissues that come in contact with dusts or particulates of this product. Contact with this product may cause allergic reactions. This product is a powerful oxidizer and can act to initiate and sustain the combustion of combustible materials. Thermal decomposition of this product produces irritating vapors and toxic gases (e.g. sulfur oxides and sodium oxides). Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

Hazard Statements

DANGER! STRONG OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIALS MAY CAUSE FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES IRRITATION TO EYES, SKIN, AND RESPIRATORY TRACT. MAY CAUSE RESPIRATORY SENSITIZATION AND ALLERGIC REACTION BY INHALATION. Keep from contact with combustible materials. Avoid contact with eyes and skin. Avoid breathing dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

Potential Health Effects: Eyes

Exposure to particulates or solution of this product may cause irritation of the eyes with symptoms such as stinging, tearing and redness. Prolonged contact may cause chemical burns.

Potential Health Effects: Skin

This product can cause irritation of the skin, with symptoms such as reddening, discomfort and itching. Prolonged skin contact may lead to severe irritation or chemical burns. Prolonged or repeated contact may cause allergic skin reactions.

Potential Health Effects: Ingestion

Ingestion of this product can cause nausea, vomiting, abdominal cramps, headache, and possible burns. Ingestion of large volumes of this product may be fatal.

Potential Health Effects: Inhalation

Breathing dusts or particulates generated by this product can lead to irritation of the nose, throat or respiratory system. Symptoms of such exposure could include coughing and sneezing. Repeated or prolonged exposure can cause an asthma-like allergic reaction. Symptoms of such reaction can include wheezing, difficulty breathing, and nasal congestion.

HMIS Ratings: Health Hazard: 2* Fire Hazard: 0 Physical Hazard: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. Seek immediate medical attention.

First Aid: Skin

Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

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*** Section 4 - First Aid Measures (Continued) ***

First Aid: Ingestion

DO NOT INDUCE VOMITING. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not flammable

Upper Flammable Limit (UEL): Not applicable

Auto Ignition: Not applicable

Rate of Burning: Not applicable

Method Used: Not applicable

Lower Flammable Limit (LEL): Not applicable

Flammability Classification: Not applicable

General Fire Hazards

Sodium Persulfate is not combustible; however, it is a strong oxidizer, which can act to initiate and sustain the combustion of flammable materials. Contact with combustible materials, flammable materials or powdered metals can cause fire or explosion. Sodium Persulfate can ignite when shocked. Damp Sodium Persulfate in contact with combustible materials may cause spontaneous combustion. When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases (e.g. sulfur oxides and sodium oxide). Closed containers may explode when exposed to heat.

Hazardous Combustion Products

Sodium oxide and sulfur oxides.

Extinguishing Media

Use water only, do not use dry chemical, CO2 or halon. Flood fire with water from a distance.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. Cool containers with flooding quantities of water. For large fires, use unmanned hoses or monitor nozzles; if this is not possible, withdraw from area and let fire burn. If possible control runoff from fire control or dilution water to prevent environmental contamination.

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 1 Other: Oxidizer

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product. Wipe down area routinely to avoid the accumulation of dusts.

Clean-Up Procedures

Keep combustible materials away from spilled material. Small releases can be cleaned-up wearing gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up. Prevent rinsate of spill area from contamination to sewer, groundwater or soil.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and laundry before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

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*** Section 7 - Handling and Storage ***

Handling Procedures

All personnel who handle this material, should be thoroughly trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Wherever dust clouds may be generated, eliminate sparks, flames and other ignition sources. Use this product only with adequate ventilation. Wash thoroughly after handling. Care should be taken to avoid the accumulation of dusts, which can create a serious dust-explosion hazard.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of corrosion- and fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

Sodium Persulfate (7775-27-1)

ACGIH: 0.1 mg/m³ TWA

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent Standards of Canada. Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or chemical goggles. If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves. Neoprene, PVC, rubber or equivalent gloves are recommended. Wear long-sleeved shirt and trousers. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

No specific guidelines are available. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. Special applications may necessitate the use of more stringent respiratory protection. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection.

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area. Wash hands thoroughly after handling material.

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*** Section 9 - Physical & Chemical Properties ***

Physical Properties: Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance:	White crystalline powder	Odor:	Odorless
Physical State:	Solid	pH:	6.0 (1% solution)
Vapor Pressure:	Not applicable	Vapor Density:	Not applicable
Boiling Point:	Not available	Melting Point:	Not available
Solubility (H₂O):	549 g/L @ 20 deg C	Specific Gravity:	2.4 (H ₂ O = 1)
Freezing Point:	Not applicable	Particle Size:	Not available
Softening Point:	Not applicable	Bulk Density:	Not available
Molecular Weight:	238.13	Chemical Formula:	Na ₂ S ₂ O ₈

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Gradually decomposes; promoted by moisture and high temperatures.

Chemical Stability: Conditions to Avoid

Avoid high temperatures, exposure to air, moisture, friction, shock and incompatible materials.

Incompatibility

Sodium Persulfate is a strong oxidizing agent and presents a serious fire and explosion risk. Do not permit contact with combustible, organic or other oxidizable materials. Avoid contact with strong acids, alkalis, halides, reducing agents, organic materials, combustibles, finely powdered metals, iron, copper, zinc, sodium peroxide, aluminum + water, magnesium, alcohols, hydrazine and organic monomers.

Hazardous Decomposition

Sulfur oxides and sodium oxide.

Hazardous Polymerization

Will not occur.

*** Section 11 – Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

May cause eye, skin, nose, throat and respiratory tract irritation. Depending on the duration of contact, over-exposures can irritate or burn the eyes, skin, mucous membranes and any other exposed tissue. If inhaled, irritation of the respiratory system can occur, with coughing and breathing difficulty. May cause allergic skin and respiratory sensitization. Harmful or fatal if swallowed.

Chronic: Long term skin overexposure to this product may lead to dermatitis (red, itchy skin).

B: Component Analysis - LD₅₀/LC₅₀

Sodium Persulfate (7775-27-1):

LD₅₀ (Intraperitoneal-Mouse) 226 mg/kg

B: Component Analysis - TDLo/LDLo

LDLo (Intravenous-Rabbit, adult) 178 mg/kg Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

This compound is not listed by ACGIH, IARC, OSHA, NIOSH or NTP.

Epidemiology

No information available.

Neurotoxicity

No information available.

Mutagenicity

No information available.

Teratogenicity

No information available.

Other Toxicological Information

None.

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*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

No information available.

B: Ecotoxicity

Sodium Persulfate:

LC₅₀ (*Poecilia reticulata* Guppy) 48 hours = 631000 µg/L; LC₅₀ (*Cyclops strenuus* Cyclopoid copepod) 48 hours = 649,000 µg/L

Environmental Fate

No data available for this product.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

This product may be considered an EPA Waste D001 (Ignitable-Oxidizer).

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this compound.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

*** Section 14 - Transportation Information ***

NOTE: The data in this section (Section 14) are meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

UN/NA #: UN 1505

Shipping Name: Sodium persulfate

Hazard Class: 5.1

Packing Group: III

Required Label(s): 5.1

Additional Shipping Information

The Limited Quantities of Division 5.1 materials exception [49 CFR 173.152 (b)] may be applicable to shipments of Sodium Persulfate if each inner packaging does not exceed 5.0 kg (11 pounds) and packaged in strong outer packages not to exceed 30 kg (66 pounds). Such shipments need not be marked with the Proper Shipping Name of the contents, but shall be marked with the UN Number (1505) of the contents, preceded by the letters "UN", placed within a diamond. The width of the line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. For a shipment by air the class 5.1 label will be required.

International Air Transport Association (IATA):

For Shipments by Air transport: This information applies to air shipments both within the U.S. and for shipments originating in the U.S., but being shipped to a different country

UN/NA #: UN 1505

Proper Shipping Name: Sodium persulphate

Hazard Class: 5.1

Packing Group: III

Passenger & Cargo Aircraft Packing Instruction: 516

Passenger & Cargo Aircraft Maximum Net Quantity: 25 kg

Limited Quantity Packing Instruction (Passenger & Cargo Aircraft): Y516

Limited Quantity Maximum Net Quantity (Passenger & Cargo Aircraft): 10 kg

Cargo Aircraft Only Packing Instruction: 518

Cargo Aircraft Only Maximum Net Quantity: 100 kg

Special Provisions: None

ERG Code: 5L

Limited Quantity Shipments: Such shipments must be marked with the proper shipping name, UN number, and must be additionally marked with the words "LIMITED QUANTITIES" or "LTD. QTY". The total weight of each outer packaging cannot exceed 30 kg (66 pounds). For a shipment by air the class 5.1 label will be required.

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*** Section 14 - Transportation Information (Continued) ***

International Maritime Organization (I.M.O.) Classification

For shipments via marine vessel transport, the following classification information applies.

UN/NA #: UN 1505

Proper Shipping Name: SODIUM PERSULPHATE

Hazard Class: class 5.1

Packing Group: III

Special Provisions: None

Limited Quantities: 5 kg

Packing Instructions: P002, LP02

IBC Instructions: IBC08

IBC Provisions: B3

EmS: F-A, S-Q

Stowage and Segregation: Category A.

Limited Quantity Shipments: Such shipments need not be marked with the Proper Shipping Name of the contents, but shall be marked with the UN Number (1505) of the contents, preceded by the letters "UN", placed within a diamond. The width of the line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. The total weight of each outer packaging cannot exceed 30 kg (66 pounds).

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No additional information.

B: Component Analysis

This material contains no chemical component required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

SARA 302 There are no specific Threshold Planning Quantities for Sodium Persulfate. The default Federal MSDS submission (EHS TPQ) and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Persulfate	7775-27-1	Yes	No	No	Yes	Yes

State Regulations

A: General Product Information

California Proposition 65

Sodium Persulfate is not on the California Proposition 65 chemical lists.

B: Component Analysis - State

Sodium Persulfate appears on one or more of the following state hazardous substance lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sodium Persulfate	7775-27-1	No	No	No	No	Yes	No

Other Regulations

A: General Product Information

No other information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Sodium Persulfate	7775-27-1	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

Sodium Persulfate is not identified under the Canadian Hazardous Products Act Ingredient Disclosure List.

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*** Section 15 - Regulatory Information (Continued)***

ANSI LABELING (Z129.1): **DANGER!** STRONG OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIALS MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED. MAY CAUSE SKIN AND EYE IRRITATION OR BURNS. HARMFUL IF INHALED. MAY CAUSE RESPIRATORY SENSITIZATION AND ALLERGIC REACTION BY INHALATION. Keep from contact with clothing and other combustible material. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing dusts and particulates. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH/MSHA-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water only. Do not use dry chemical, CO₂, or "alcohol" foam. **IN CASE OF SPILL:** Clean-up spilled material by dry-sweeping or vacuum, avoiding the generation of dusts. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

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Revision Log

09/19/00 3:00 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.
08/20/01 4:30 PM CLJ Changed contact to Sue, non-800 Chemtrec Num.
03/18/21 5:26 PM HDF Checked exposure limits; overall review, add SARA 311/312 Haz Ratings.
07/31/03 5:30 pm HDF General review of entire MSDS. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
06/22/05 1:32 PM SEP Update IATA Section 14
09/05/06 4:33 pm SEP Updated DOT and IMO Section 14

This is the end of MSDS # C1-180