

Safety Data Sheet

Sodium Persulfate

SDS #: 7775-27-1
Revision Date: 2014-04-02
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product name Sodium Persulfate
Synonyms Sodium Peroxydisulfate; Disodium Peroxydisulfate; Peroxydisulfuric acid, disodium salt; Peroxydisulfuric acid, sodium salt
EC-No 231-892-1
Pure substance/mixture Substance
Formula H₂O₈S₂.2Na

Recommended use: Polymerization initiator. Etchant and cleaner for printed circuit boards. Hair bleaching formulations. Secondary oil recovery. Oxidizing agent for a variety of organic reactions.

Restrictions on use: No uses to be advised against were identified

Manufacturer

PeroxyChem LLC
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Philadelphia, PA 19103
Phone: +1 215/ 299-5858 (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification of the chemical

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ systemic toxicity (single exposure)	Category 3
Oxidizing solids	Category 3

Labeling

Symbol(s)



Signal Word:

Danger

Hazard statements	H302 - Harmful if swallowed H315 - Causes skin irritation H319 - Causes serious eye irritation H317 - May cause an allergic skin reaction H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled H335 - May cause respiratory irritation H272 - May intensify fire; oxidizer
Precautionary Statements	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 P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P272 - Contaminated work clothing should not be allowed out of the workplace P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection P285 - In case of inadequate ventilation wear respiratory protection P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell P330 - Rinse mouth P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention P362 - Take off contaminated clothing and wash before reuse 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 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/ physician P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up P501 - Dispose of contents/ container to an approved waste disposal plant
Hazards Not Otherwise Classified	
General Hazards	None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	ENCS (Japan)	ISHL No.	CAS-No
Sodium Persulfate	> 99	X		7775-27-1

4. FIRST AID MEASURES

General advice	Remove from exposure, lie down. Show this material safety data sheet to the doctor in attendance.
Eye contact	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.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Inhalation	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth. Drink 1 or 2 glasses of water.

Most important symptoms and effects, both acute and delayed Itching; Redness; Coughing and/ or wheezing.

5. FIRE-FIGHTING MEASURES

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep off any unprotected persons. Avoid contact with the skin and the eyes. Avoid breathing dust. Wear personal protective equipment.
Environmental precautions	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.
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.
Other	Never add other substances or combustible waste to product residues.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Avoid dust formation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with skin and eyes. Avoid breathing dust. Remove and wash contaminated clothing before re-use. Reference to other sections.
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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines

Chemical Name	Japan	ACGIH TLV	China	Korea
Sodium Persulfate 7775-27-1		TWA: 0.1 mg/m ³		
Chemical Name	Taiwan	Indonesia	Australia	India
Sodium Persulfate 7775-27-1		TWA 0.1 mg/m ³	Peak 0.01 mg/m ³	

Occupational exposure controls

Engineering measures Local exhaust ventilation w >90% efficiency.

Personal Protective Equipment

General Information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

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Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Eye/face protection	Eye protection recommended. Chemical goggles consistent with EN 166 or equivalent.
Skin and body protection	Wear suitable protective clothing. Protective shoes or boots.
Hand protection	Protective gloves: Neoprene gloves, Polyvinylchloride, Natural Rubber.
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Crystalline solid
Color	white
Physical state	solid
Odor	Odorless
Odor Threshold	Not applicable
pH	6.0 (1% solution)
Melting Point/Range	Decomposes on heating. 180 °C
Freezing point	Not applicable
Flash Point	Not flammable
Boiling Point/Range	Decomposes
Autoignition Temperature	No evidence of combustion up to 600°C
Explosive properties	Not explosive
Oxidizing properties	Oxidizer
Percent volatile	No information available
Vapor pressure	No information available mm Hg at 25°C
Vapor density	No information available
Density	No information available
Viscosity	No information available (Solid)
Water solubility	730 g/L @ 25 °C
Partition coefficient	No information available. (inorganic)
Evaporation rate	No information available
Molecular Weight	238.1
Decomposition Temperature	> 100 °C (assume)

10. STABILITY AND REACTIVITY

Reactivity	Strong oxidizer .
Hazardous reactions	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.
Conditions to avoid	Heat. (decomposes at 275 °C). Moisture.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information.

Skin contact	Irritating to skin Persulfates in general, specifically diammonium persulfate and dipotassium persulfate, exhibited skin irritation properties in human case reports, following occupational exposure and consumer use. Slightly or non-irritating (rabbit)
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Eye contact	Irritating to eyes Has been shown to exhibit eye irritation properties in human case reports following occupational exposure and consumer use. Non-irritating (Rabbit)
Inhalation	May cause irritation of respiratory tract. Respiratory irritation has been seen in workers exposed to persulfates. In animals, diammonium persulfate, produced pathological respiratory irritation in a subchronic study.
LD50 Dermal	> 10,000 mg/kg (rabbit) Sodium Persulfate
LD50 Oral	1200 mg/kg (Rat) Sodium Persulfate
LC50 Inhalation	= > 5.1 mg/L (4-hr) (Rat) Sodium Persulfate
Sensitization	Sensitizing to skin and respiratory system. Positive in a local lymph node assay.
Subchronic toxicity	Oral (NOAEL) = 91 mg/kg bw Sodium Persulfate Inhalation (NOAEC) = 10.3 mg/m ³ (Ammonium Persulfate) Dermal: No data available
Chronic Toxicity	
Target Organ Effects	Eyes. Skin. Respiratory system.
Carcinogenicity	Did not show carcinogenic effects in animal experiments.
Mutagenicity	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Sodium Persulfate (7775-27-1)				
Active Ingredient(s)	Duration	Species	Value	Units
Sodium Persulfate	96 h LC50	Rainbow trout	163	mg/L
Sodium Persulfate	48 h LC50	Daphnia magna	133	mg/L
Sodium Persulfate	96 h LC50	Grass shrimp	519	mg/L
Sodium Persulfate	72 h EC50	Algae <i>S. capricornutum</i>	116	mg/L

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Sodium Persulfate 7775-27-1		771: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 771: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static		133: 48 h <i>Daphnia magna</i> mg/L EC50

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

Contaminated packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

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DOT

UN/ID No UN 1505
Proper shipping name SODIUM PERSULFATE
Hazard Class 5.1
Packing group III

TDG

UN/ID No UN 1505
Proper shipping name SODIUM PERSULFATE
Hazard Class 5.1
Packing group III

IMDG/IMO

UN/ID No UN 1505
Proper shipping name SODIUM PERSULFATE
Hazard Class 5.1
Packing group III
Transport in bulk according to MARPOL 73/78 and the IBC Code See IMDG above

ICAO/IATA

UN/ID No UN 1505
Proper shipping name SODIUM PERSULFATE
Hazard Class 5.1
Packing group III

ADN

UN/ID No UN 1505
Proper shipping name SODIUM PERSULFATE
Hazard Class 5.1
Packing group III

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA Inventory (United States of America)	DSL (Canada)	EINECS/ELI NCS (Europe)	ENCS (Japan)	IECSC (China)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)	NZIoC (New Zealand)
Sodium Persulfate 7775-27-1	X	X	X	X	X	X	X	X	X

ENCS - Japan Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Japan

Chemical Name	Dangerous Substances	organic solvents	Harmful Substances Whose Names Are to be Indicated on the Label	Pollution Release and Transfer Registry (Class II):	Pollution Release and Transfer Registry (Class I):	Poisonous and Deleterious Substances Control Law
Sodium Persulfate	>0.1 %	Not applicable	Not applicable		395	

16. OTHER INFORMATION

Revision Date: 2014-04-02
Reason for revision: Initial Release.

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Prepared By

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End of Material Safety Data Sheet