

Distributed by: Kepro Circuit Systems, Inc.  
Catalog #'s -- SP-1G, SP-4G, SP-12G, SP-20G

# MATERIAL SAFETY DATA SHEET

## Sodium Persulfate



MSDS Ref. No: 7775-27-1  
Version: US/Canada  
Date Approved: 12/07/1998  
Revision No: 2

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Sodium Persulfate

**SYNONYM(s):** Sodium Peroxydisulfate; Disodium Peroxydisulfate

**GENERAL USE:** Polymerization initiator. Etchant and cleaner in manufacture of printed circuit boards. Booster in hair bleaching formulations in cosmetics. Secondary oil recovery systems as a polymerization initiator and a gel breaker.

### MANUFACTURER

FMC Corporation  
Active Oxidant Division  
1735 Market Street  
Philadelphia, PA 19103  
**General Information:** (215) 299-6000

### Emergency Telephone Numbers:

**CHEMTREC** (800) 424-9300  
**Emergency Phone** (303) 595-9048  
(Medical) Call Collect  
**Emergency Phone** (716) 879-0400  
(Plant/Other) Call Collect

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## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt.%</u>
Sodium Persulfate	7775-27-1	>99

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### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**IMMEDIATE CONCERNS:** Oxidizer: Decomposes in storage under conditions of moisture (water/water vapor) and/or excessive heat causing release of oxides of sulfur, nitrogen and oxygen that supports combustion. Decomposition could form a high temperature melt.

**POTENTIAL HEALTH EFFECTS:** Airborne persulfate dust may be irritating to eyes, nose, lungs, throat and skin upon contact. Exposure to high levels of persulfate dust may cause difficulty in breathing in sensitive persons.

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### 4. FIRST AID MEASURES

**EYES:** Flush with plenty of water. Get medical attention if irritation occurs and persists.

**SKIN:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

**INGESTION:** Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

**INHALATION:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

**NOTES TO MEDICAL DOCTOR:** This product has low oral toxicity and is not irritating to the eyes and skin. Flooding of exposed areas with water is suggested, but gastric lavage or emesis induction for ingestions must consider possible aggravation of esophageal injury and the expected absence of system effects. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

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### 5. FIRE FIGHTING MEASURES

**FLAMMABLE LIMITS:** Non-combustible

**EXTINGUISHING MEDIA:** Deluge with water.

**EXPLOSION HAZARDS:** Product is non-combustible. On decomposition releases oxygen which may intensify fire. Presence of water accelerates decomposition.

**FIRE FIGHTING PROCEDURES:** Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfate. Wear full protective clothing and self contained breathing apparatus.

**AUTOIGNITION TEMPERATURE:** Not applicable. No evidence of combustion up to 800°C. Decomposition will occur upon heating.

**FLASH POINT:** Non-combustible

**SENSITIVITY TO STATIC DISCHARGE:** No data available

**SENSITIVITY TO IMPACT:** No data available

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxygen that supports combustion and oxides of sulfur and nitrogen.

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## 6. ACCIDENTAL RELEASE MEASURES

**RELEASE NOTES:** Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to regulatory agencies procedures.

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## 7. HANDLING AND STORAGE

**HANDLING:** Use adequate ventilation when transferring product from bags or drums. Wear respiratory protection if ventilation is inadequate or not available. Use eye and skin protection. Use clean plastic or stainless steel scoops only.

**STORAGE:** Store (unopened) in a cool, clean, dry place away from point sources of heat, e.g. radiant heaters or steam pipes. Use first in, first out storage system. Avoid contamination of opened product. In case of fire or decomposition (fuming/smoking) deluge with plenty of water to control decomposition. For storage, refer to NFPA Bulletin 43A on storage of liquid and solid oxidizing materials.

**COMMENTS: VENTILATION:**

Provide mechanical general and/or local exhaust ventilation to prevent release of dust into work environment. Spills should be collected into suitable containers to prevent dispersion into the air.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMITS

<u>Chemical Name</u>	<u>TWA</u> <u>(ACGIH)</u>	<u>STEL/Ceiling</u> <u>(ACGIH)</u>	<u>PEL</u> <u>(OSHA)</u>	<u>STEL/Ceiling</u> <u>(OSHA)</u>
Sodium Persulfate	0.1 mg/m <sup>3</sup>			

**ENGINEERING CONTROLS:** Provide mechanical local general room ventilation to prevent release of dust into the work environment. Remove contaminated clothing immediately and wash before reuse.

## **PERSONAL PROTECTIVE EQUIPMENT**

**EYES AND FACE:** Use cup type chemical goggles. Full face shield may be used.

**RESPIRATORY:** Use approved dust respirator when airborne dust is expected.

**PROTECTIVE CLOTHING:** Rubber or neoprene gloves. Normal work clothes. Rubber or neoprene footwear.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

**ODOR:** None

**APPEARANCE:** White crystals

**pH:** (1% solution) @ 25°C = typically 5.0-7.0

**PERCENT VOLATILE:** Not applicable

**VAPOR PRESSURE:** Not applicable

**VAPOR DENSITY:** (Air = 1): Not applicable

**BOILING POINT:** Not applicable

**MELTING POINT:** Decomposes

**SOLUBILITY IN WATER:** % by wt. @ 25°C (77°F): 73

**EVAPORATION RATE:** (Butyl Acetate = 1): Not applicable

**DENSITY:** Not available

**SPECIFIC GRAVITY:** (H<sub>2</sub>O=1): 2.6

**COEFF. OIL/WATER:** Not applicable

**ODOR THRESHOLD:** Not applicable

**OXIDIZING PROPERTIES:** Oxidizer

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## **10. STABILITY AND REACTIVITY**

**CONDITIONS TO AVOID:** Heat and moisture.

**STABILITY:** Stable (becomes unstable in presence of heat, moisture and

contamination).

**POLYMERIZATION:** Will not occur

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxygen that supports combustion and oxides of sulfur and nitrogen.

**INCOMPATIBLE MATERIALS:** Acids, alkalis, halides (fluorides, chlorides, bromides), combustible materials, heavy metals, oxidizable materials, reducing agents and organic compounds.

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## 11. TOXICOLOGICAL INFORMATION

**EYE EFFECTS:** Non-irritating (rabbit) [FMC Study Number: ICG/T-79.029]

**SKIN EFFECTS:** Non-irritating (rabbit); May be sensitizer to allergic persons. [FMC Study Number: ICG/T-79.029]

**DERMAL LD<sub>50</sub>:** >10 g/kg [FMC Study Number: ICG/T-79.029]

**ORAL LD<sub>50</sub>:** 895 mg/kg (rat) [FMC Study Number: ICG/T-79.029]

**INHALATION LC<sub>50</sub>:** 5.10 mg/L (rat) [FMC I95-2017]

**TARGET ORGANS:** Eyes, skin, respiratory passages

**ACUTE EFFECTS FROM OVEREXPOSURE:** Dust may be harmful and irritating. May be harmful if swallowed.

**CHRONIC EFFECTS FROM OVEREXPOSURE:** Sensitive persons may develop dermatitis and asthma [Respiration 38:144, 1979]. Groups of male and female rats were fed 0, 300 or 3000 ppm sodium persulfate in the diet for 13 weeks, followed by 5000 ppm for 5 weeks. Microscopic examination of tissues revealed some injury to the gastrointestinal tract at the high dose (3000 ppm) only. This effect is not unexpected for an oxidizer at high concentrations. [Ref. FMC I90-1151, Toxicologist 1:149, 1981]

### CARCINOGENICITY:

IARC: Not listed

NTP: Not listed

OSHA: Not listed

OTHER: ACGIH: Not listed

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## 12. ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION:

Bluegill sunfish, 96-hour LC50 = 771 mg/L [FMC Study I92-1250]  
Rainbow trout, 96-hour LC50 = 163 mg/L [FMC Study I92-1251]  
Daphnia, 48-hour LC50 = 133 mg/L [FMC Study I92-1252]  
Grass shrimp, 96-hour LC50 = 519 mg/L [FMC Study I92-1253]

**CHEMICAL FATE INFORMATION:** Biodegradability does not apply to inorganic substances.

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## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Dispose as a hazardous waste in accordance with regulatory agencies.

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## 14. TRANSPORT INFORMATION

### U.S. DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Sodium Persulfate

**UN/NA NUMBER:** UN 1505

**PLACARDS:** 5.1 (Oxidizer)

**LABEL:** Oxidizer

### **OTHER SHIPPING INFORMATION:**

DOT Marking: Sodium Persulfate, UN 1505

Hazardous Substance/RQ: Not applicable

49 STCC Number: 4918733

225 lb. fiber drum (DOT 21C250 w/polyliner)

55 lb. poly bag (DOT 44P)

1000-2000 lb. IBC (DOT Exemption E8489)

**SPECIAL SHIPPING NOTES:** IMDG: Sodium Persulfate

IATA: Sodium Persulfate

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

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## 15. REGULATORY INFORMATION

### UNITED STATES

### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**SECTION 311 HAZARD CATEGORY (40 CFR 370):** Fire Hazard, Immediate (Acute) Health Hazard

**SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):** 10000 lbs.

**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):** Not listed

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):** Not applicable

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)**

**CERCLA REGULATORY (40 CFR 302.4):** (unlisted) RQ = 100 lbs., Ignitability

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

**TSCA STATUS (40 CFR 710):** Listed

**RCRA STATUS:** Waste No. D001

**CANADA**

**WHMIS (WORKER HAZARDOUS MATERIALS INFORMATION SYSTEM):** Product Identification No.: 1505

Hazard Classification: Class C (Oxidizer), Class D, Div. 2, Subdiv. B. (Toxic)

Ingredient Disclosure List: Listed

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## 16. OTHER INFORMATION

**REVISION SUMMARY** Revision #: 2

This MSDS replaces the October 07, 1997 MSDS. Any changes in information are as follows:

In Section 9  
(Group Field) for Water Solubility

In Section 16  
Section 16 Footnotes

**HMIS RATING**

**HEALTH:** 1

**FLAMMABILITY:** 0

**REACTIVITY:** 1

**PROTECTION:** J

**NFPA RATING**

**HEALTH:** 1

**FLAMMABILITY:** 0

**REACTIVITY:** 1

OX

Key

4 = Severe

3 = Serious

2 = Moderate

1 = Slight

0 = Minimal

**HMIS RATINGS NOTES:**

Protection = J (Safety goggles, gloves, apron & combination dust & vapor respirator)

The contents and format of this MSDS are in accordance with OSHA Hazard Communication Standard and Canada's Workplace Hazardous Information System (WHMIS).

National Fire Protection Association (NFPA)

SPECIAL = OX (Oxidizer)

Hazardous Materials Identification System (HMIS)

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