



KENCRO

CHEMICALS

SODIUM PERSULFATE

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER: SODIUM PERSULFATE
PRODUCT USE: POLYMERIZATION INITIATOR, ETCHANT AND CLEANER IN MANUFACTURE OF PRINTED CIRCUIT BOARDS. BOOSTER IN HAIR BLEACHING FORMULATION IN COSMETICS. SECONDARY OIL RECOVERY SYSTEM AS A POLYMERIZATION INITIATOR AND A GEL BREAKER.
CHEMICAL FAMILY: INORGANIC PEROXY COMPOUNDS
SUPPLIER'S NAME AND ADDRESS: KENCRO CHEMICALS LIMITED
2172 WYECROFT RD., UNIT #4
OAKVILLE, ON
L6L 5V6
905-827-4133
24 HR. EMERGENCY NUMBER: 613-996-6666 (CANUTEC)

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	C.A.S. #	WT. %	LC50 INHALATION	LD50 ORAL	DERMAL
SODIUM PERSULFATE	7775-27-1	>99%	5.1MG/L (RAT)	895 MG/KG (RAT)	>10G/KG

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WHITE ODOURLESS CRYSTALS.
STRONG OXIDIZER, CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
HARMFUL IF SWALLOWED OR INHALED.
MAY CAUSE BURNS TO SKIN AND EYES.
CAUSE RESPIRATORY TRACT IRRITATION.
MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

SIGNS AND SYMPTOMS OF SHORT-TERM EXPOSURE:

SKIN CONTACT: CAUSES SEVERE IRRITATION OR BURNS. SYMPTOMS INCLUDE REDNESS, ITCHING AND PAIN. MAY CAUSE ALLERGIC SKIN REACTIONS.
EYE CONTACT: CAN CAUSE SEVERE IRRITATION OR BURNS WITH EYE DAMAGE. AIRBORNE PERSULFATE DUST MAY BE IRRITATING TO EYES UPON CONTACT.
INHALATION: AIRBORNE PERSULFATE DUST MAY BE IRRITATING TO NOSE, THROAT AND RESPIRATORY TRACT UPON CONTACT. SYMPTOMS MAY INCLUDE SORE THROAT, SHORTNESS OF BREATH, INFLAMMATION OF NASAL PASSAGES, COUGHING AND WHEEZING. MAY CAUSE LUNG EDEMA, A MEDICAL EMERGENCY. MAY CAUSE AN ALLERGIC REACTION. ASTHMA-LIKE SYMPTOMS AND LIFE-THREATENING SHOCK EXPOSURE TO HIGH LEVELS OF PERSULFATE DUST MAY CAUSE DIFFICULTY IN BREATHING IN SENSITIVE PERSONS.
INGESTION: MAY BE HARMFUL IF SWALLOWED. CAUSES SEVERE IRRITATION AND POSSIBLE BURNS TO THE MOUTH AND THROAT. GASTROINTESTINAL DISTURBANCES MAY BE EXPECTED WITH NAUSEA, ABDOMINAL PAIN AND VOMITING.
POTENTIAL CHRONIC HEALTH EFFECTS: SENSITIVE PERSONS MAY DEVELOP DERMATITIS AND ASTHMA. [RESPIRATION 38:144, 1979]. GROUPS OF RATS WERE FED 0, 300 OR 3,000 PPM SODIUM PERSULFATE IN THE DIET FOR 13 WEEKS, FOLLOWED BY 5,000 PPM FOR 5 WEEKS. MICROSCOPIC EXAMINATION OF TISSUES REVEALED SOME INJURY TO THE GASTROINTESTINAL

TRACT AT THE HIGH DOSE (3,000 PPM) ONLY. THIS EFFECT IS NOT UNEXPECTED FOR AN OXIDIZER AT HIGH CONCENTRATIONS. [RE. FMC 190-1151, TOXICOLOGIST 1:149, 1981]

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT OR DISCOMFORT OCCURS AND PERSISTS, CONTACT A MEDICAL DOCTOR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, IF BREATHING IS DIFFICULT, GIVE OXYGEN, GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT: WASH WITH PLENTY OF SOAP AND WATER WHILE REMOVING CONTAMINATED CLOTHING. GET MEDICAL ATTENTION IF IRRITATION OCCURS AND PERSISTS. WASH CLOTHING BEFORE REUSE.

EYE CONTACT: FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. 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.

NOTES TO PHYSICIAN:
THIS PRODUCT HAS LOW ORAL TOXICITY. 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.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARDS/CONDITION OF FLAMMABILITY:
PRODUCT IS NON-COMBUSTIBLE. NO EVIDENCE OF COMBUSTION UP TO 800°C. UPON DECOMPOSITION RELEASES OXYGEN WHICH MAY INTENSIFY FIRE. PRESENCE OF WATER ACCELERATES DECOMPOSITION.

FLASH POINT: NON-COMBUSTIBLE

FLASH POINT METHOD: N/AP. **AUTO IGNITION TEMPERATURE:** N/AP.

LOWER FLAMMABLE LIMIT: NON-COMBUSTIBLE **UPPER FLAMMABLE LIMIT:** NON-COMBUSTIBLE
(% BY VOL.) (% BY VOL.)

OXIDIZING PROPERTIES: OXIDIZER

FLAME PROJECTION LENGTH: N/AP.

EXPLOSION DATA: SENSITIVITY TO MECHANICAL IMPACT/STATIC DISCHARGE:
NO DATA AVAILABLE

SUITABLE EXTINGUISHING MEDIA:
DELUGE WITH WATER

SPECIAL FIRE-FIGHTING PROCEDURES/EQUIPMENT:
DO NOT USE CARBON DIOXIDE OR OTHER GAS FILLED FIRE EXTINGUISHERS; THEY WILL HAVE NO EFFECT ON DECOMPOSING PERSULFATES. WEAR FULL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING APPARATUS.

HAZARDOUS COMBUSTION PRODUCTS:
OXYGEN THAT SUPPORTS COMBUSTION AND OXIDES OF SULFUR.

SECTION 6: ACCIDENTAL RELEASE MEASURES

LEAK AND SPILL PROCEDURES:
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 HAZARDOUS WASTE. ALL DISPOSALS SHOULD BE CARRIED OUT ACCORDING TO LOCAL, PROVINCIAL AND FEDERAL REGULATIONS.

SPILLS SHOULD BE COLLECTED INTO SUITABLE CONTAINERS TO PREVENT DISPERSION INTO THE AIR. REMOVE CONTAMINATED CLOTHING IMMEDIATELY AND WASH BEFORE REUSE.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES:
USE ADEQUATE VENTILATION WHEN TRANSFERING 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.

PRECAUTIONARY STATEMENT: 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 VAPOUR, 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.

STORAGE REQUIREMENTS:

STORE (UNOPENED) IN A COOL, CLEAN, DRY PLACE AWAY FROM POINT SOURCES OF HEAT, E.G. RADIANT HEATERS AND 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 430 ON STORAGE OF LIQUID AND SOLID OXIDIZING MATERIALS.

INCOMPATIBLE MATERIALS:

ACIDS, ALKALIS, HALIDES (FLUORIDES, CHLORIDES, BROMIDES AND IODIDES), COMBUSTIBLE MATERIALS, MOST METALS AND HEAVY METALS, OXIDIZABLE MATERIALS, OTHER OXIDIZERS, REDUCING AGENTS, CLEANERS AND ORGANIC OR CARBON CONTAINING COMPOUNDS. CONTACT WITH INCOMPATIBLE MATERIALS CAN RESULT IN A MATERIAL DECOMPOSITION OR OTHER UNCONTROLLED REACTIONS.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

INGREDIENTS	ACGIH	OSHA PEL	
	TWA	PEL	STEL
SODIUM PERSULFATE	0.1 MG/M ³	N/AV.	N/AV.

SEE COMPOSITION/INFORMATION ON INGREDIENTS, SECTION 2.

ENGINEERING CONTROLS:

PROVIDE MECHANICAL AND/OR LOCAL GENERAL ROOM VENTILATION TO PREVENT RELEASE OF DUST INTO WORK ENVIRONMENT.

GLOVES/TYPE:

RUBBER OR NEOPRENE GLOVES. THOROUGHLY WASH THE OUTSIDE OF GLOVES WITH SOAP AND WATER PRIOR TO REMOVAL. INSPECT REGULARLY FOR LEAKS.

RESPIRATORY/TYPE:

USE APPROVED DUST RESPIRATOR WHEN AIRBORNE DUST IS EXPECTED.

EYE/TYPE:

USE CUP TYPE CHEMICAL GOGGLES. FULL FACE SHIELD MAY BE USED.

FOOTWEAR/TYPE:

RUBBER OR NEOPRENE FOOTWEAR.

CLOTHING/TYPE:

NORMAL WORK CLOTHES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	SOLID CRYSTALS	APPEARANCE:	WHITE
ODOUR:	NONE	ODOUR THRESHOLD:	N/AP.
PH:	TYPICALLY 5.0 – 7.0 @ 25°C (1% SOLUTION)	BOILING POINT:	N/AP.
SPECIFIC GRAVITY:	2.6 (WATER = 1)	MELTING/FREEZING POINT:	DECOMPOSES
COEFFICIENT OF WATER/OIL		SOLUBILITY IN WATER:	73% (BY WT.)@ 25°C
DISTRIBUTION:	N/AP.	VAPOUR DENSITY (AIR=1):	N/AP.
EVAPOURATION RATE:	N/AP.		

MOLECULAR WEIGHT: 192.12
MOLECULAR FORMULA: Na₂S₂O₈

SECTION 10: REACTIVITY AND STABILITY DATA

STABILITY AND REACTIVITY:

UNSTABLE. GRADUALLY DECOMPOSES LOSING OXYGEN. DECOMPOSES MORE RAPIDLY AT HIGHER TEMPERATURES. STABILITY DECREASES IN THE PRESENCE OF MOISTURE. METALS OTHER THAN STAINLESS STEEL ARE APT TO CAUSE DECOMPOSITION OR PERSULFATE SOLUTIONS.

CONDITIONS TO AVOID:

HEAT, MOISTURE AND CONTAMINATION.

INCOMPATIBLE MATERIALS:

ACIDS, ALKALIS, HALIDES (FLUORIDES, CHLORIDES, BROMIDES AND IODIDES),
COMBUSTIBLE MATERIALS, MOST METALS AND HEAVY METALS, OXIDIZABLE MATERIALS,
OTHER OXIDIZERS, REDUCING AGENTS, CLEANERS AND ORGANIC OR CARBON CONTAINING
COMPOUNDS. CONTACT WITH INCOMPATIBLE MATERIALS CAN RESULT IN A MATERIAL
DECOMPOSITION OR OTHER UNCONTROLLED REACTIONS.

HAZARDOUS DECOMPOSITION PRODUCTS:

OXYGEN THAT SUPPORTS COMBUSTION AND OXIDES OF SULFUR.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA: SEE SECTION 2 INFORMATION ON INGREDIENTS
CARCINOGENIC STATUS: NOT LISTED AS A CARCINOGEN BY NTP, IARC, OSHA OR ACGIH.
REPRODUCTIVE EFFECTS: N/AV.
TERATOGENICITY: N/AV.
MUTAGENICITY: N/AV.
SENSITIZATION TO MATERIAL:
MAY BE SENSITIZING TO ALLERGIC PERSONS.
POLYMERIZATION: WILL NOT OCCUR
SYNERGISTIC MATERIALS:N/AV.
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:
N/AV.
ADDITIONAL HEALTH HAZARDS:
TARGET ORGANS: EYES, SKIN, RESPIRATORY PASSAGES.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL:
BLUEGILL SUNFISH, 96-HOUR LC50 = 771MG/L
RAINBOW TROUT, 96-HOUR LC50 = 163 MG/L
DAPHNIA, 48-HOUR LC50 = 133 MG/L
GRASS SHRIMP, LC50 = 519 MG/L

SECTION 13: DISPOSAL CONSIDERATIONS

HANDLING FOR DISPOSAL:SWEEP OR SHOVEL SOLIDS INTO A PROPER CONTAINER FOR DISPOSAL.
METHOD OF DISPOSAL: DISPOSE AS A HAZARDOUS WASTE IN ACCORDANCE WITH LOCAL, PROVINCIAL
AND FEDERAL REGULATIONS.

SECTION 14: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: SODIUM PERSULFATE
TDG CLASSIFICATION: CLASS 5.1 (OXIDIZER), UN 1505, PKG GRP III

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION: C (OXIDIZER), D2B (POISONOUS AND INFECTIOUS MATERIALS, TOXIC)

SECTION 16: OTHER INFORMATION

LEGEND:	ACGIH	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
	CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
	IARC	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
	LC	LETHAL CONCENTRATION
	LD	LETHAL DOSE
	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
	N/AP.	NOT APPLICABLE
	N/AV.	NOT AVAILABLE
	NTP	NATIONAL TOXICOLOGICAL PROGRAM
	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
	PEL	PERMISSIBLE EXPOSURE LIMIT
	STEL	SHORT TERM EXPOSURE LIMIT
	TDG	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
	TWA	TIME WEIGHTED AVERAGE
	WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

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