

POTASSIUM NITRATE

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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

SUBSTANCE: ~~**POTASSIUM NITRATE**~~

CAS-NUMBER 7757-79-1

TRADE NAMES/SYNONYMS: NITER; NITRE; SALTPETER; P-383; P-261; P-263

CHEMICAL FAMILY:
INORGANIC SALT

MOLECULAR FORMULA: K-N-03 MOL WT 101.11

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=0

COMPONENTS AND CONTAMINANTS

PERCENT: 100 COMPONENT: POTASSIUM NITRATE

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
NONE ESTABLISHED

PHYSICAL DATA

DESCRIPTION: COLORLESS, TRANSPARENT PRISMS, WHITE GRANULAR OR CRYST-
ALLINE POWDER, WITH A COOLING, SALINE, PURGENT TASTE

BOILING POINT: 752 F (400 C) DEC MELTING POINT: 633 F (334 C)

SPECIFIC GRAVITY: 2.1 PH: 7.0 SOLUBILITY IN WATER: 13.3%

SOLVENT SOLUBILITY: LIQUID AMMONIA, GLYCEROL

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
OXIDIZING AGENT: MAY CAUSE IGNITION, VIOLENT COMBUSTION OR EXPLOSION WHEN IN CONTACT WITH EASILY OXIDIZABLE SUBSTANCES; INCREASES THE FLAMMABILITY OF COMBUSTIBLE MATERIALS.

FLASH POINT: NON-FLAMMABLE

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE OR WATER SPRAY
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGE FIRES, USE WATER SPRAY OR FOG
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING:
MOVE CONTAINERS FROM FIRE AREA IF POSSIBLE. COOL CONTAINERS EXPOSED TO FLAMES WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT. FOR MASSIVE FIRE IN STORAGE AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES; ELSE WITHDRAW FROM AREA AND LET FIRE BURN (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FLOOD WITH WATER. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING VAPORS OR DUSTS. EVACUATE TO A RADIUS OF 2500 FEET FOR UNCONTROLLABLE FIRES (BUREAU OF EXPLOSIVES, EMERGENCY HANDLING OF HAZARDOUS MATERIALS IN SURFACE TRANSPORTATION, 1981).

TOXICITY

3015 MG/KG ORAL-RABBIT LD50; 100 MG/KG INTRAVENOUS-CAT LD10; MUTAGENIC DATA (RTEC); TERATOGENIC DATA (RTEC); CARCINOGENIC STATUS: NONE.
POTASSIUM NITRATE IS AN EYE, MUCCOUS MEMBRANE, AND SKIN IRRITANT. POISONING AFFECTS THE BLOOD.

HEALTH EFFECTS AND FIRST AID

INHALATION:
IRRITANT.

ACUTE EXPOSURE- COUGHING, DYSPNEA, DIZZINESS, HEADACHE, FLUSHING OF THE SKIN, NAUSEA, VOMITING, SHOCK, MARKED HYPOTENSION, CYANOSIS, CONVULSIONS, COMA, AND RESPIRATORY PARALYSIS MAY OCCUR.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE SYMPTOMS AS WITH ACUTE INHALATION.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION. TREAT METHEMOGLOBINEMIA. (DREISBACH, HANDBOOK OF POISONING, 11TH ED.) OXYGEN AND METHEMOGLOBINEMIA TREATMENT MUST BE ADMINISTERED BY QUALIFIED MEDICAL PERSONNEL.

SKIN CONTACT:
IRRITANT.

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ACUTE EXPOSURE- DIRECT CONTACT MAY CAUSE IRRITATION. ABSORPTION MAY CAUSE
SYMPTOMS AS WITH ACUTE INHALATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE DERMATITIS. AB-
SORPTION MAY CAUSE SYMPTOMS AS WITH ACUTE INHALATION.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED
AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL
NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES).
GET MEDICAL ATTENTION.

EYE CONTACT:
IRRITATION.

ACUTE EXPOSURE- DIRECT CONTACT MAY CAUSE IRRITATION, REDNESS, PAIN.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY
LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL RE-
MAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION.

INGESTION:
IRRITANT.

ACUTE EXPOSURE- ABDOMINAL SPASM, NAUSEA, VOMITING, DIARRHEA, DIURESIS,
MARKED HYPOTENSION, FAINTNESS, MUSCLE SPASMS, CYANOSIS,
CONVULSION, COLLAPSE, COMA, BLOOD DISORDERS, AND RESPIRATORY
PARALYSIS ARE POSSIBLE.

FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF
WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET
MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY

REACTIVITY:
MAY REACT WITH REDUCING AGENTS AND INCOMPATIBLE SUBSTANCES.

INCOMPATIBILITIES:

EXPLOSION: PHOSPHORUS.

EXPLOSION BY HEATING: ANTIMONY TRISULFIDE, METALS: POTASSIUM, TITANIUM, AN-
TIMONY, GERMANIUM, ZIRCONIUM, ZINC, ETC., METAL SULFIDES: SULFIDES OF AN-
TIMONY, BARIUM, CALCIUM, GERMANIUM, ETC., SODIUM THIOSULFATE, TRICOPPER DI-
PHOSPHIDE, TITANIUM DISULFIDE, SODIUM ACETATE AND TARTARATES, OXALATES AND
CITRATES, BIS(TRICHLOROMETHYL)BENZENE.

EXPLOSION BY IMPACT: COPPER MONOPHOSPHIDE, LEAD PHOSPHITE, LEAD NITRATE.

EXPLOSION AFTER LONG CONTACT: TIN, SOLDER, TIN PLATE, STANNATES.

EXPLOSION ON DISSOLVING: SODIUM HYPOSULFITE.

POSSIBLE EXPLOSION: SODIUM PEROXIDE AND DEXTROSE.

VIOLENT OR INTENSE COMBUSTION: CARBON, COPPER PHOSPHIDE.

IGNITION: CALCIUM SILICIDE, BORON PHOSPHIDE.

INCANDESCENT COMBUSTION BY HEATING IN AIR: THORIUM CARBIDE.

FORMATION OF EXPLOSIVE MIXTURE: ARSENIC DISULFIDE, ARSENIC, SODIUM HYPOPHOS-
PHITE, SODIUM THIOSULFATE, SODIUM ACETATE, SULFUR AND DIARSENIC TRISULFIDE.

FORMATION OF PYROTECHNIC MIXTURE: CHARCOAL, SULFUR AND ARSENIC TRISULFIDE.

INCANDESCENT REACTION: SELENIUM, TITANIUM.

DECOMPOSITION: THERMAL DECOMPOSITION RELEASES FLAMMABLE OXYGEN AND TOXIC NITROGEN DIOXIDE.

POLYMERIZATION: NOT KNOWN TO OCCUR.

CONDITIONS TO AVOID

MAY IGNITE OTHER COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.). REACTION WITH FUELS MAY BE VIOLENT. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

CONSULT NFPA PUBLICATION 43A, STORAGE OF LIQUID AND SOLID OXIDIZING MATERIALS, FOR STORAGE REQUIREMENTS.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC) AWAY FROM SPILLED MATERIAL. DO NOT TOUCH SPILLED MATERIAL. FOR SMALL DRY SPILLS, WITH CLEAN SHOVEL PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND COVER; MOVE CONTAINERS FROM SPILL AREA. FOR SMALL LIQUID SPILLS, TAKE UP WITH SAND, EARTH OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.

PROTECTIVE EQUIPMENT

VENTILATION: PROCESS ENCLOSURE, LOCAL EXHAUST, OR GENERAL DILUTION VENTILATION SYSTEM.

RESPIRATOR: HIGH LEVELS- DUST MASK.

FIRE FIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING: EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT TO PREVENT ANY POSSIBILITY OF SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES: EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION: EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

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