



chemists helping chemists in research & industry

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STEVE ANDERSON

DATE: 01/17/91
CUST#: 523216
PO#: QC10266

Chem

M A T E R I A L S A F E T Y D A T A S H E E T

PAGE 1

IDENTIFICATION

PRODUCT #: 15777-5
CAS #: 10026-13-8
MF: CL5P

NAME: PHOSPHORUS PENTACHLORIDE, 98%

SYNONYMS

FOSFORO(PENTACLORURO DI) (ITALIAN) * FOSFORPENTACHLORIDE (DUTCH) *
PIECIOCHLOREK FOSFORU (POLISH) * PHOSPHORE(PENTACHLORURE DE) (FRENCH)
* PHOSPHORIC CHLORIDE * PHOSPHOROUS PENTACHLORIDE *
PHOSPHORPENTACHLORID (GERMAN) * PHOSPHORUS PENTACHLORIDE * PHOSPHORUS
PENTACHLORIDE (ACGIH, DOT, OSHA) * PHOSPHORUS PERCHLORIDE * UN 1806
(DOT) *

TOXICITY HAZARDS

RTECS NO: TB6125000

PHOSPHORANE, PENTACHLORO-

TOXICITY DATA

ORL-RAT LD50: 660 MG/KG
IHL-RAT LC50: 205 MG/M3

TNICS* 13,104,73
TNICS* 13,105,73

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 0.1 PPM 85IN8 5,485,86
MSHA STANDARD-AIR:TWA 1 MG/M3 DTLVS* 3,211,71
OSHA PEL: 8H TWA 1 MG/M3 FEREAC 54,2923,89
OSHA PEL FINAL: 8H TWA 1 MG/M3 FEREAC 54,2923,89
NOHS 1974: HZD 59160; NIS 4; TNF 100; NOS 4; TNE 804
NOES 1983: HZD 59160; NIS 2; TNF 21; NOS 17; TNE 2242; TFE 187
EPA TSCA CHEMICAL INVENTORY, JUNE 1990

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

HEALTH HAZARD DATA

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA OF THE LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

FIRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS

CONTINUED ON NEXT PAGE

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PAGE 2

CUST#: 523216
PO#: QC10266

PRODUCT #: 15777-5
CAS #: 10026-13-8
MF: CL5P

NAME: PHOSPHORUS PENTACHLORIDE, 98%

----- HEALTH HAZARD DATA -----

AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.

----- PHYSICAL DATA -----

MELTING PT: 179 C TO 181 C (SUBL)
SPECIFIC GRAVITY: 1.600
VAPOR PRESSURE: <1 MM @ 20 C
APPEARANCE AND ODOR
YELLOW POWDER

----- FIRE AND EXPLOSION HAZARD DATA -----

EXTINGUISHING MEDIA
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
DO NOT USE WATER.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
WATER HYDROLYZES MATERIAL LIBERATING ACIDIC GAS WHICH IN CONTACT WITH METAL SURFACES CAN GENERATE FLAMMABLE AND/OR EXPLOSIVE HYDROGEN GAS.

----- REACTIVITY DATA -----

INCOMPATIBILITIES
ALCOHOLS
REACTS VIOLENTLY WITH WATER.
AMINES
ALUMINUM
SODIUM

CONTINUED ON NEXT PAGE

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NAME: PHOSPHORUS PENTACHLORIDE, 98%

----- REACTIVITY DATA -----

POTASSIUM
ACIDS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

HYDROGEN CHLORIDE GAS

THERMAL DECOMPOSITION MAY PRODUCE TOXIC FUMES OF PHOSPHORUS OXIDES
AND/OR PHOSPHINE.

----- SPILL OR LEAK PROCEDURES -----

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WASTE DISPOSAL METHOD

PLEASE CONTACT THE TECHNICAL SERVICES DEPARTMENT. BE SURE TO MENTION
THE NAME, CATALOG NUMBER, AND THE QUANTITY OF THE MATERIAL.

OBSERVE ALL FEDERAL, STATE, AND LOCAL LAWS.

----- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE -----

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT
GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

FACE SHIELD (8-INCH MINIMUM).

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

WASH THOROUGHLY AFTER HANDLING.

CORROSIVE.

TOXIC.

KEEP TIGHTLY CLOSED.

DO NOT ALLOW CONTACT WITH WATER.

STORE UNDER NITROGEN.

STORE IN A COOL DRY PLACE.

----- ADDITIONAL PRECAUTIONS AND COMMENTS -----

ADDITIONAL INFORMATION

A SOLUTION OF PHOSPHORUS PENTACHLORIDE IN NITROBENZENE IS STABLE AT

CONTINUED ON NEXT PAGE

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PAGE 4

CUST#: 523216
PO#: QCL0266

PRODUCT #: 15777-5
CAS #: 10026-13-8
MF: CL5P

NAME: PHOSPHORUS PENTACHLORIDE, 98%

----- ADDITIONAL PRECAUTIONS AND COMMENTS -----

110 C BUT BEGINS TO DECOMPOSE WITH ACCELERATING VIOLENCE ABOVE 120 C WITH EVOLUTION OF NITROUS FUMES. A HEATED MIXTURE WITH MAGNESIUM OXIDE INCANDESCES BRILLIANTLY. VIOLENT REACTION WITH PHOSPHORUS(III) OXIDE OR HYDROXYLAMINE AT AMBIENT TEMPERATURE. PHOSPHOROUS PENTACHLORIDE IGNITES ON CONTACT WITH FLUORINE AND EXPLODES ON CONTACT WITH A MIXTURE OF CHLORINE AND CHLORINE DIOXIDE. A DRY MIXTURE WITH UREA EXPLODED AFTER HEATING, PROBABLY OWING TO THE FORMATION OF NITROGEN TRICHLORIDE.

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