# Chem-Impex International Inc.

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# SAFETY DATA SHEET

#### SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 41098

NAME: Thiophosphoryl chloride

SYNONYMS: Phosphorus thiochloride

Phosphorus sulfochloride

24 HOUR EMERGENCY

TELEPHONE:

(800) 535-5053(USA)

352-323-3500 (INTERNATIONAL)

TO REQUEST AN MSDS: (800) 869-9290

CUSTOMER SERVICE:

(630) 766-2112

#### SECTION 2. HAZARDS IDENTIFICATION

### CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

ACUTE TOXICITY, ORAL (CATEGORY 4), H302 ACUTE TOXICITY, INHALATION (CATEGORY 2), H330 SKIN CORROSION (CATEGORY 1B), H314 SERIOUS EYE DAMAGE (CATEGORY 1), H318 SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 3), H402 LONG-TERM (CHRONIC) AQUATIC HAZARD (CATEGORY 3), H412

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

# GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAM

SIGNAL WORD DANGER

HAZARD STATEMENT(S)

H302 HARMFUL IF SWALLOWED.

H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

H318 CAUSES SERIOUS EYE DAMAGE.

H330 FATAL IF INHALED.

H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

PRECAUTIONARY STATEMENT(S)

P260 DO NOT BREATHE DUST/ FUME/ GAS/ MIST/ VAPOURS/

SPRAY.

P264 WASH SKIN THOROUGHLY AFTER HANDLING. P270 DO NOT EAT, DRINK OR SMOKE WHEN USING THIS

PRODUCT.

P271 USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.

P273 AVOID RELEASE TO THE ENVIRONMENT.

P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE

PROTECTION/ FACE PROTECTION.

P284 WEAR RESPIRATORY PROTECTION.

P301 + P312 + P330 IF SWALLOWED: CALL A POISON CENTER/DOCTOR IF YOU

FEEL UNWELL. RINSE MOUTH.

P301 + P330 + P331 IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE VOMITING.

P303 + P361 + P353 IF ON SKIN (OR HAIR): TAKE OFF IMMEDIATELY ALL

CONTAMINATED CLOTHING. RINSE SKIN WITH

WATER/SHOWER.

P304 + P340 + P310 IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP

COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A

POISON CENTER/DOCTOR.

P305 + P351 + P338 + IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL

P310 MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND

EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A

POISON CENTER/DOCTOR.

P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.

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 LACHRYMATOR

**OTHERWISE** 

CLASSIFIED (HNOC) OR NOT COVERED BY GHS

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: Cl<sub>3</sub>PS

MW: 169.38

CAS-NO. 3982-91-0

**PURITY**:  $\geq$  98% (Assay by titration)

### **HAZARDOUS COMPONENTS**

COMPONENT	CLASSIFICATION	CONCENTRATION
Thiophosphoryl chloride		
	ACUTE TOX. 4; ACUTE TOX. 1;	<= 100 %
	SKIN CORR. 1B; EYE DAM. 1;	
	STOT SE 3; AQUATIC ACUTE 3;	
	H302, H330, H314, H318, H335,	
	H402	

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

# SECTION 4. FIRST-AID MEASURES

# **DESCRIPTION OF FIRST AID MEASURES**

CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA **GENERAL ADVICE** 

SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF

DANGEROUS AREA.

IF INHALED IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF

NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.

CONSULT A PHYSICIAN.

IN CASE OF SKIN

TAKE OFF CONTAMINATED CLOTHING AND SHOES **CONTACT** IMMEDIATELY. WASH OFF WITH SOAP AND PLENTY OF

WATER. TAKE VICTIM IMMEDIATELY TO HOSPITAL.

CONSULT A PHYSICIAN.

IN CASE OF EYE RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT

**CONTACT** 

LEAST 15 MINUTES AND CONSULT A

PHYSICIAN.CONTINUE RINSING EYES DURING

TRANSPORT TO HOSPITAL.

IF SWALLOWED DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING

BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE

MOUTH WITH WATER. CONSULT A PHYSICIAN.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED NO DATA AVAILABLE

#### SECTION 5. FIRE AND EXPLOSION DATA

**EXTINGUISHING MEDIA** 

SUITABLE USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY

**EXTINGUISHING MEDIA** CHEMICAL OR CARBON DIOXIDE.

SPECIAL HAZARDS SULFUR OXIDES, OXIDES OF PHOSPHORUS, ARISING FROM THE HYDROGEN CHLORIDE GAS

SUBSTANCE OR MIXTURE

ADVICE FOR WEAR SELF-CONTAINED BREATHING APPARATUS FOR

**FIREFIGHTERS** FIREFIGHTING IF NECESSARY.

FURTHER INFORMATION NO DATA AVAILABLE

# SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL
PRECAUTIONS,
PROTECTIVE
EQUIPMENT AND
EMERGENCY
PROCEDURES

WEAR RESPIRATORY PROTECTION. ENSURE ADEQUATE VENTILATION. EVACUATE PERSONNEL TO SAFE AREAS.

FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PRECAUTIONS

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.

DISCHARGE INTO THE ENVIRONMENT MUST BE

AVOIDED.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP CLEAN UP PROMPTLY BY SWEEPING OR VACUUM.

REFERENCE TO OTHER SECTIONS

FOR DISPOSAL SEE SECTION 13.

#### SECTION 7. HANDLING AND STORAGE

**PRECAUTIONS FOR SAFE** AVOID CONTACT WITH SKIN AND EYES. **HANDLING** FOR PRECAUTIONS SEE SECTION 2.2.

**CONDITIONS FOR SAFE** KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND

**STORAGE, INCLUDING** WELL-VENTILATED PLACE. **ANY INCOMPATIBILITIES** MOISTURE SENSITIVE.

Store at RT

SPECIFIC END USE(S) APART FROM THE USES MENTIONED IN SECTION 1.2 NO

OTHER SPECIFIC USES ARE STIPULATED

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### **CONTROL PARAMETERS**

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

**EXPOSURE CONTROLS** 

**APPROPRIATE** AVOID CONTACT WITH SKIN, EYES AND CLOTHING. **ENGINEERING CONTROLS** WASH HANDS BEFORE BREAKS AND IMMEDIATELY

AFTER HANDLING THE PRODUCT.

PERSONAL PROTECTIVE EQUIPMENT

**EYE/FACE PROTECTION** FACE SHIELD AND SAFETY GLASSES USE EQUIPMENT

FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS

SUCH AS NIOSH (US) OR EN 166(EU).

#### SKIN PROTECTION

HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE"S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

FULL CONTACT

MATERIAL: FLUORINATED RUBBER MINIMUM LAYER THICKNESS: 0.7 MM BREAK THROUGH TIME: > 480 MIN

MATERIAL TESTED: VITOJECT (KCL 890, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.4 MM BREAK THROUGH TIME: 117 MIN

MATERIAL TESTED: CAMATRIL (KCL 730, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE EC APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR

ANY SPECIFIC USE SCENARIO.

**BODY PROTECTION** 

COMPLETE SUIT PROTECTING AGAINST CHEMICALS, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

RESPIRATORY PROTECTION

USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

CONTROL OF ENVIRONMENTAL EXPOSURE PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colorless to yellow clear liquid

ODOUR STINGING

ODOUR THRESHOLD NO DATA AVAILABLE PH 1.7 AT 100 G/L AT 23 C

**MELTING** 

POINT/FREEZING POINT INITIAL BOILING POINT AND BOILING RANGE

FLASH POINT

EVAPORATION RATE NO DATA AVAILABLE FLAMMABILITY (SOLID, NO DATA AVAILABLE

GAS)

UPPER/LOWER NO DATA AVAILABLE

FLAMMABILITY OR EXPLOSIVE LIMITS

VAPOUR PRESSURE 22 HPA AT 25 C VAPOUR DENSITY NO DATA AVAILABLE

RELATIVE DENSITY 1.64 g/mL

WATER SOLUBILITY (DECOMPOSITION)

PARTITION COEFFICIENT: NOT APPLICABLE FOR INORGANIC SUBSTANCES

N- OCTANOL/WATER

AUTO-IGNITION 340 C AT 1,013 HPA - DIN 51794

TEMPERATURE

DECOMPOSITION NO DATA AVAILABLE

**TEMPERATURE** 

VISCOSITY

EXPLOSIVE PROPERTIES

OXIDIZING PROPERTIES

NO DATA AVAILABLE

NO DATA AVAILABLE

NO DATA AVAILABLE

### OTHER SAFETY INFORMATION

NO DATA AVAILABLE

# **SECTION 10. STABILITY AND REACTIVITY**

**REACTIVITY** NO DATA AVAILABLE

CHEMICAL STABILITY STABLE UNDER RECOMMENDED STORAGE

CONDITIONS.

POSSIBILITY OF HAZARDOUS REACTIONS NO DATA AVAILABLE

CONDITIONS TO AVOID NO DATA AVAILABLE

INCOMPATIBLE MATERIALS NO DATA AVAILABLE

HAZARDOUS DECOMPOSITION PRODUCTS HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - SULFUR OXIDES, OXIDES OF

PHOSPHORUS, HYDROGEN CHLORIDE GAS OTHER DECOMPOSITION PRODUCTS - NO DATA

AVAILABLE

IN THE EVENT OF FIRE: SEE SECTION 5

### SECTION 11. TOXICOLOGICAL INFORMATION

### INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY LD50 ORAL - RAT - MALE AND FEMALE - 750 MG/KG

REMARKS: (LIT.) ABSORPTION

LC50 INHALATION - RAT - 4 H - 0.14 MG/L

REMARKS: (IUCLID)

INHALATION: ABSORPTION

DERMAL: NO DATA AVAILABLE

NO DATA AVAILABLE

SKIN - RABBIT

CORROSION/IRRITATION RESULT: CORROSIVE - 4 H

(DRAIZE TEST)

SERIOUS EYE

DAMAGE/EYE IRRITATION

NO DATA AVAILABLE

RESPIRATORY OR SKIN

**SENSITISATION** 

NO DATA AVAILABLE

GERM CELL MUTAGENICITY MUTAGENICITY (MAMMAL CELL TEST):

CHROMOSOME ABERRATION.

RESULT: NEGATIVE

(IUCLID)

MOUSE - MALE - BONE MARROW

RESULT: NEGATIVE

(LIT.)

RAT - MALE AND FEMALE - BONE MARROW

RESULT: NEGATIVE

(LIT.)

**CARCINOGENICITY** 

IARC: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS

IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED

HUMAN CARCINOGEN BY IARC.

ACGIH: NO INGREDIENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL

CARCINOGEN BY ACGIH.

NTP: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED

CARCINOGEN BY NTP.

OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON

OSHA S LIST OF REGULATED CARCINOGENS.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY - SINGLE

**EXPOSURE** 

MAY CAUSE RESPIRATORY IRRITATION.

ACUTE ORAL TOXICITY - IF INGESTED, SEVERE BURNS OF THE MOUTH AND THROAT, AS WELL AS A DANGER OF PERFORATION OF THE ESOPHAGUS AND

THE STOMACH.

ACUTE INHALATION TOXICITY - MUCOSAL IRRITATIONS, COUGH, SHORTNESS OF BREATH, POSSIBLE DAMAGES: DAMAGE OF RESPIRATORY

TRACT

SPECIFIC TARGET ORGAN

TOXICITY - REPEATED

**EXPOSURE** 

NO DATA AVAILABLE

**ASPIRATION HAZARD** NO DATA AVAILABLE

ADDITIONAL INFORMATION

RTECS: XN2930000

MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE

OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES, AND SKIN, SPASM,

INFLAMMATION AND EDEMA OF THE LARYNX, SPASM,

INFLAMMATION AND EDEMA OF THE BRONCHI, PNEUMONITIS, PULMONARY EDEMA, BURNING SENSATION, COUGH, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA

DECOMPOSITION OF THE SUBSTANCE WITH TISSUE

MOISTURE. FURTHER DATA:

OTHER DANGEROUS PROPERTIES CAN NOT BE

EXCLUDED.

THIS SUBSTANCE SHOULD BE HANDLED WITH

PARTICULAR CARE.

# SECTION 12. ECOLOGICAL INFORMATION

**TOXICITY** 

TOXICITY TO FISH STATIC TEST LC50 - DANIO RERIO (ZEBRA FISH) - 99

MG/L - 96 H

REMARKS: (IUCLID)

TOXICITY TO ALGAE STATIC TEST ERC50 - DESMODESMUS SUBSPICATUS

(GREEN ALGAE) - > 149 MG/L - 72 H

(OECD TEST GUIDELINE 201)

PERSISTENCE AND **DEGRADABILITY** 

THE METHODS FOR DETERMINING THE BIOLOGICAL

DEGRADABILITY ARE NOT APPLICABLE TO

INORGANIC SUBSTANCES.

**BIOACCUMULATIVE** 

POTENTIAL

NO DATA AVAILABLE

MOBILITY IN SOIL NO DATA AVAILABLE

ASSESSMENT

RESULTS OF PBT AND VPVB PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT

REQUIRED/NOT CONDUCTED

OTHER ADVERSE EFFECTS AN ENVIRONMENTAL HAZARD CANNOT BE

EXCLUDED IN THE EVENT OF UNPROFESSIONAL

HANDLING OR DISPOSAL. HARMFUL TO AQUATIC LIFE.

POSSIBLE DECOMPOSITION PRODUCTS IN CASE OF

HYDROLYZIS ARE: HYDROCHLORIC ACID

FURTHER INFORMATION ON ECOLOGY

DISCHARGE INTO THE ENVIRONMENT MUST BE

AVOIDED.

#### SECTION 13. **DISPOSAL CONSIDERATIONS**

#### WASTE TREATMENT METHODS

**PRODUCT** OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO

A LICENSED DISPOSAL COMPANY. CONTACT A

LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN

AFTERBURNER AND SCRUBBER.

**CONTAMINATED PACKAGING** 

DISPOSE OF AS UNUSED PRODUCT.

#### **SECTION 14.** TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: THIOPHOSPHORYL CHLORIDE

UN NUMBER: 1837 CLASS: 8 PACKING GROUP: II

REPORTABLE QUANTITY

(RO):

POISON INHALATION NO

HAZARD:

**IMDG** 

PROPER SHIPPING NAME: THIOPHOSPHORYL CHLORIDE

UN NUMBER: 1837 CLASS: 8 PACKING GROUP: II EMS-NO: F-A, S-B

**IATA** 

PROPER SHIPPING NAME: THIOPHOSPHORYL CHLORIDE

UN NUMBER: 1837 CLASS: 8 PACKING GROUP: II

IATA PASSENGER: NOT PERMITTED FOR TRANSPORT

#### SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO

THE REPORTING REQUIREMENTS OF SARA TITLE III,

SECTION 302.

SARA 313 COMPONENTS THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL

COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

SARA 311/312 HAZARDS ACUTE HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

Thiophosphoryl chloride 3982-91-0 03-01-2007

NEW JERSEY RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

Thiophosphoryl chloride 3982-91-0 03-01-2007

#### **CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH, OR ANY OTHER REPRODUCTIVE DEFECTS.

#### SECTION 16. OTHER INFORMATION

### FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H302 HARMFUL IF SWALLOWED.

H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

H318 CAUSES SERIOUS EYE DAMAGE.

H330 FATAL IF INHALED.

H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING

EFFECTS.

MSDS LEGEND

MW: MOLECULAR WEIGHT MF: MOLECULAR FORMULA

VOC: VOLATILE ORGANIC COMPOUNDS

ACGIH: AMERICAN CONFERENCE OF GOVERNMENENTAL INDUSTRIAL

**HYGINISTS** 

CAS: CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PEL: PERMISSIBLE EXPOSURE LIMIT (OSHA) TLV: THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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