

Chlorfenvinphos

sc-239500



The Power is Question

Material Safety Data Sheet

Hazard Alert Code
Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

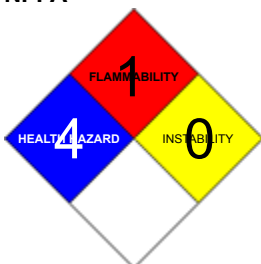
PRODUCT NAME

Chlorfenvinphos

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY

ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS



C12-H14-Cl3-O4-P, "phosphoric acid, 2-chloro-1-(2, 4-dichlorophenyl)vinyl diethyl ether", "benzyl alcohol, 2, 4-dichloro-alpha-(chloromethylene)-, diethyl phosphate", "O, O-diethyl O-(2-chloro-1-[2', 4'-dichlorophenyl]vinyl] phosphate", "diethyl 1-(2, 4-dichlorophenyl)-2-chlorovinyl phosphate", Apachlor, "Birlane 10G", C-8949, CGA-26351, Chlorfenvinfos, "Compound 4072", CVP, Dermatol, Enolofos, "ENT 24969", "GC 4072", Haptasol, "OMS 1328", Sapecron, "SD 7859", Steladone, Supona, Tarene, Unitox, Vinyphate, "organophosphate nematocide acaricide"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	Min/Nil=0
Toxicity	4	Low=1
Body Contact	3	Moderate=2
		High=3
		Extreme=4



Reactivity	1	
Chronic	2	

CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Toxic in contact with skin.

Very toxic by inhalation and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.
- Ingestion may produce nausea, vomiting, depressed appetite, abdominal cramps, and diarrhoea.
- Symptoms may include nausea, headache, giddiness, blurred vision, contraction of pupils, vomiting.

EYE

- There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
- Direct eye contact can produce tears, eyelid twitches, pupil contraction, loss of focus, and blurred or dimmed vision.

Dilation of the pupils occasionally occurs.

SKIN

- Skin contact with the material may produce toxic effects; systemic effects may result following absorption.
- The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.

The material is unlikely to produce an irritant dermatitis as described in EC Directives .

- There may be sweating and muscle twitches at site of contact.

Reaction may be delayed by hours.

- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects.

Relatively small amounts absorbed from the lungs may prove fatal.

- The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

- Poisoning due to cholinesterase inhibitors causes symptoms such as increased blood flow to the nose, watery discharge, chest discomfort, shortness of breath and wheezing.

Other symptoms include increased production of tears, nausea and vomiting, diarrhoea, stomach pain, involuntary passing of urine and stools, chest pain, breathing difficulty, low blood pressure, irregular heartbeat, loss of reflexes, twitching, visual disturbances, altered pupil size, convulsions, lung congestion, coma and heart failure.

CHRONIC HEALTH EFFECTS

- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Repeated or prolonged exposures to cholinesterase inhibitors produce symptoms similar to acute effects. In

addition workers exposed repeatedly to these substances may exhibit impaired memory and loss of concentration, severe depression and acute psychosis, irritability, confusion, apathy, emotional lability, speech difficulties, headache, spatial disorientation, delayed reaction times, sleepwalking, drowsiness or insomnia. An influenza-like condition with nausea, weakness, anorexia and malaise has been described. There is a growing body of evidence from epidemiological studies and from experimental laboratory studies that short-term exposure to some cholinesterase-inhibiting insecticides may produce behavioural or neuro-chemical changes lasting for days or months, presumably outlasting the cholinesterase inhibition. Although the number of adverse effects following humans poisonings subside, there are still effects in some workers months after cholinesterase activity returns to normal. These long-lasting effects include blurred vision, headache, weakness, and anorexia. The neurochemistry of animals exposed to chlorpyrifos or fenthion is reported to be altered permanently after a single exposure. These effects may be more severe in developing animals where both acetyl- and butyrylcholinesterase may play an integral part in the development of the nervous system. Padilla S., The Neurotoxicity of Cholinesterase-Inhibiting Insecticides Past and Present Evidence Demonstrating Persistent Effects. Inhalation Toxicology 7903-907, 1995.

BE AWARE Repeated minor exposures with only mild symptoms may have serious cumulative poisoning effect. Reduced fertility and a reduced survival rate of offspring was observed in a three generation study with rats.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
chlorfenvinphos	470-90-6	>98
industrial products may be contaminated with		
tetraethyl pyrophosphate	107-49-3	

Section 4 - FIRST AID MEASURES

SWALLOWED

If swallowed

- Contact a Poisons Information Centre or a doctor at once.
- If swallowed, activated charcoal may be advised.
- Give atropine if instructed.
- REFER FOR MEDICAL ATTENTION WITHOUT DELAY.

EYE

If this product comes in contact with the eyes

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

SKIN

If product comes in contact with skin

- Contact a Poisons Information Centre or a doctor.
- DO NOT allow clothing wet with product to remain in contact with skin, strip all contaminated clothing including boots.
- Quickly wash affected areas vigorously with soap and water.
- DO NOT give anything by mouth to a patient showing signs of narcosis, i.e. losing consciousness.

INHALED

- If spray mist, vapour are inhaled, remove from contaminated area.
- Contact a Poisons Information Centre or a doctor at once.
- Lay patient down in a clean area and strip any clothing wet with spray.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.

NOTES TO PHYSICIAN

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- Most organophosphate compounds are rapidly well absorbed from the skin, conjunctiva, gastro-intestinal tract and lungs.
- They are detoxified by Cytochrome P450-mediated monooxygenases in the liver but some metabolites are more toxic than parent compounds.
- Metabolites are usually detected 12-48 hours postexposure.
- Organophosphates phosphorylate acetylcholinesterase with resultant accumulation of large amounts of acetylcholine causing initial stimulation, then exhaustion of cholinergic synapse.

In mammals, following oral administration, chlorfenvinfos is rapidly and completely metabolised, and the metabolites are rapidly excreted in the urine (86% within 24 h). Metabolites in the rat are 2-chloro-1(2,4-dichlorophenyl)vinylethyl hydrogen phosphate (32.3%), 1-(2,4-dichlorophenyl)ethyl-beta-D-glucuronic acid (41.0%), 2,4-dichloromandelic acid (7%) and 2,4-dichlorophenylethanol glucuronide (2.6%)

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg)	7.501 mPa
Upper Explosive Limit (%)	Not available.
Specific Gravity (water=1)	1.36
Lower Explosive Limit (%)	Not available.

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include carbon dioxide (CO₂), hydrogen chloride, phosgene, phosphorus oxides (PO_x), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

RECOMMENDED STORAGE METHODS

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

<. All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
US NIOSH Recommended Exposure Limits (RELs)	tetraethyl pyrophosphate (TEPP)		0.05						[skin]
Canada - Alberta Occupational Exposure Limits	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphate))		0.05						
Canada - British Columbia Occupational Exposure Limits	tetraethyl pyrophosphate (Tetraethyl pyrophosphate (TEPP), Inhalable Revised 2007)		0.01 mg/m (V)						Skin
US OSHA Permissible Exposure Levels (PELs) - Table Z1	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphate))		0.05						

US ACGIH Threshold Limit Values (TLV)	tetraethyl pyrophosphate (Tetraethyl pyrophosphate (TEPP))	0.01				TLV® Basis Cholinesterase inhib ; BEIA
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	tetraethyl pyrophosphate (TEPP)	0.05				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphaate))	0.05				
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphaate))	0.05				
US - Minnesota Permissible Exposure Limits (PELs)	tetraethyl pyrophosphate (TEPP)	0.05				
US - California Permissible Exposure Limits for Chemical Contaminants	tetraethyl pyrophosphate (TEPP; tetraethyl pyrophosphate)	0.004	0.05			
US - Idaho - Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphaate))	0.05				
US - Hawaii Air Contaminant Limits	tetraethyl pyrophosphate (TEPP)	0.004	0.05	0.01	0.2	
US - Alaska Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphate))	0.05				
US - Michigan Exposure Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP)	0.05				
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	tetraethyl pyrophosphate (TEPP - Skin)	0.004	0.05	0.012	0.15	

US - Washington Permissible exposure limits of air contaminants	tetraethyl pyrophosphate (TEPP)	0.004	0.012		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	tetraethyl pyrophosphate (Tetraethyl pyrophosphate (TEPP))	0.05	0.15		Skin
Canada - Prince Edward Island Occupational Exposure Limits	tetraethyl pyrophosphate (Tetraethyl pyrophosphate (TEPP))	0.01			TLV® Basis Cholinesterase inhib ; BEIA
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphate))	0.05			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	tetraethyl pyrophosphate (TEPP)	0.004	0.047		
US - Oregon Permissible Exposure Limits (Z-1)	tetraethyl pyrophosphate (TEPP (Tetraethyl pyrophosphate))	0.004	0.05		Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits.
Canada - Northwest Territories Occupational Exposure Limits (English)	tetraethyl pyrophosphate (TEPP - Skin)	0.004	0.047	0.01	0.12
Canada - Nova Scotia Occupational Exposure Limits	tetraethyl pyrophosphate (Tetraethyl pyrophosphate [TEPP])	0.01			TLV Basis cholinesterase inhibition. BEI-A

PERSONAL PROTECTION



RESPIRATOR

•Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
 - Wear safety footwear or safety gumboots, eg. Rubber
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include
- frequency and duration of contact,
 - chemical resistance of glove material,
 - glove thickness and
 - dexterity

OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.
- Ensure that there is a supply of atropine tablets on hand
- Ensure all employees have been informed of symptoms of organophosphorus or carbamate poisoning and that the use of atropine in first aid is understood .

ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Toxic or noxious vapors/gas.

State	Liquid	Molecular Weight	359.57
Melting Range (°F)	-23 - -19	Viscosity	Not Available
Boiling Range (°F)	333- 338 (0.5 mm)	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available.	pH (1% solution)	Not applicable.
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapor Pressure (mmHg)	7.501 mPa
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	1.36
Lower Explosive Limit (%)	Not available.	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not available

APPEARANCE

Technical grade is a liquid; does not mix well with water(145 mg/l). Miscible with ethanol, acetone, dichloromethane, hexane, xylene, propylene glycol, kerosene. Hydrolysed slowly in neutral, acidic and slightly alkaline aqueous solutions. Hydrolysed rapidly in strongly alkaline solutions.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

STORAGE INCOMPATIBILITY

- A number of phosphate and thiophosphate esters are of limited thermal stability and undergo highly exothermic self-accelerating decomposition reactions which may be catalysed by impurities.
- The potential hazards can be reduced by appropriate thermal control measures.

BREThERICK L. Handbook of Reactive Chemical Hazards<.

- Avoid reaction with oxidising agents

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

chlorfenvinphos

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

CHLORFENVINPHOS

TETRAETHYL PYROPHOSPHATE

CARCINOGEN

ORGANOPHOSPHATE PESTICIDES	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s) P65-MC
tetraethyl pyrophosphate	US - Rhode Island Hazardous Substance List	IARC

SKIN

tetraethyl pyrophosphate	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants - Skin	Skin Designation	X
tetraethyl pyrophosphate	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin	Skin Designation	X
tetraethyl pyrophosphate	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X

tetraethyl pyrophosphate	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	X
tetraethyl pyrophosphate	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	Yes
tetraethyl pyrophosphate	US AIHA Workplace Environmental Exposure Levels (WEELs) - Skin	Notes	TLV® Basis Cholinesterase inhib ; BEIA
tetraethyl pyrophosphate	US NIOSH Recommended Exposure Limits (RELs) - Skin	Skin	Yes
tetraethyl pyrophosphate	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin	Skin	X
tetraethyl pyrophosphate	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Skin	Skin	X
tetraethyl pyrophosphate	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	X
tetraethyl pyrophosphate	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	Yes
tetraethyl pyrophosphate	Canada - British Columbia Occupational Exposure Limits - Skin	Notation	Skin
tetraethyl pyrophosphate	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	X
tetraethyl pyrophosphate	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	Yes
tetraethyl pyrophosphate	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
tetraethyl pyrophosphate	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
tetraethyl pyrophosphate	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	Yes
tetraethyl pyrophosphate	US - Oregon Permissible Exposure Limits (Z2) - Skin	Skin	X
tetraethyl pyrophosphate	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X
tetraethyl pyrophosphate	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	S
tetraethyl pyrophosphate	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

B. Component Waste Numbers

When tetraethyl pyrophosphate is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number P111 (waste code T).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible. Special hazard may exist - specialist advice may be required.
- Consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury or incinerate residue at an approved site.
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
- Puncture containers to prevent re-use and bury at an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols:	None	Hazard class or Division:	6.1
Identification Numbers:	UN3018	PG:	I
Label Codes:	6.1	Special provisions:	N76, T14, TP2, TP13, TP27
Packaging: Exceptions:	None	Packaging: Non-bulk:	201
Packaging: Exceptions:	None	Quantity limitations: Passenger aircraft/rail:	1 L

Quantity Limitations: Cargo aircraft only:	30 L	Vessel stowage: Location:	B
Vessel stowage: Other:	40	S.M.P.:	YES

Hazardous materials descriptions and proper shipping names:
Organophosphorus pesticides, liquid, toxic

Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	3018	Packing Group:	I
Special provisions:	A3		

Cargo Only

Packing Instructions:	658	Maximum Qty/Pack:	30 L
Passenger and Cargo		Passenger and Cargo	
Packing Instructions:	652	Maximum Qty/Pack:	1 L
Passenger and Cargo Limited Quantity		Passenger and Cargo Limited Quantity	
Packing Instructions:	Forbidden	Maximum Qty/Pack:	Forbidden

Shipping Name: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC
*(CONTAINS CHLORFENVINPHOS)

Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	3018	Packing Group:	I
EMS Number:	F-A,S-A	Special provisions:	61 274
Limited Quantities:	0	Marine Pollutant:	Yes

Shipping Name: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC(contains chlorfenvinphos)

Section 15 - REGULATORY INFORMATION

chlorfenvinphos (CAS: 2701-86-2,18708-86-6,470-90-6) is found on the following regulatory lists;

"US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Massachusetts Oil & Hazardous Material List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US FDA Maximum Recommended Therapeutic Dose (MRTD) Database"

Regulations for ingredients

tetraethyl pyrophosphate (CAS: 107-49-3) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "International Maritime Dangerous Goods Requirements (IMDG Code) - Marine Pollutants", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "US - Alaska Limits for Air Contaminants", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - Connecticut Hazardous Air Pollutants", "US - Delaware Pollutant Discharge Requirements - Reportable Quantities", "US - Hawaii Air Contaminant Limits", "US - Idaho - Limits for Air Contaminants", "US - Massachusetts Oil & Hazardous Material List", "US - Michigan Exposure Limits for Air Contaminants", "US - Minnesota Hazardous Substance List", "US - Minnesota Permissible Exposure Limits (PELs)", "US - New Jersey Right to Know Hazardous Substances", "US - Oregon Permissible Exposure Limits (Z-1)", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Vermont Hazardous

Constituents", "US - Vermont Hazardous Waste - Acutely Hazardous Wastes", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Dangerous waste constituents list", "US - Washington Discarded Chemical Products List - ""P"" Chemical Products", "US - Washington Permissible exposure limits of air contaminants", "US - Wisconsin Control of Hazardous Pollutants - Emission Thresholds, Standards and Control Requirements (Pesticides, Rodenticides, Insecticides, Herbicides or Fungicides)", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US CWA (Clean Water Act) - List of Hazardous Substances", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US Department of Transportation (DOT) Marine Pollutants - Appendix B", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPA Acute Exposure Guideline Levels (AEGs) - Holding", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US NIOSH Recommended Exposure Limits (RELs)", "US OSHA Permissible Exposure Levels (PELs) - Table Z1", "US RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261", "US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes", "US SARA Section 302 Extremely Hazardous Substances"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Cumulative effects may result following exposure*.
- May produce discomfort of the eyes*.

* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name	CAS
chlorfenvinphos	2701-86-2, 18708-86-6, 470-90-6

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- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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