

**PROZAP® VAPONA 400E****MATERIAL SAFETY DATA SHEET****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****PRODUCT NAME: PROZAP® VAPONA 400E****CHEMICAL NAME:** Dichlorvos; DDVP; Dimethyl 2,2-dichlorovinylphosphate**GENERAL USE:** Organophosphate insecticide**PRODUCT DESCRIPTION:****EPA Registration Number:** 5481-204-47000**Revision Date:** 22 April, 2003**MANUFACTURED FOR:**

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**EMERGENCY TELEPHONE NUMBERS:****MANUFACTURER:** 323-264-3910**TRANSPORTATION (24 HOURS)****CHEMTREC:** 800-424-9300**2. COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENT	WT % (w/v)	CAS No.
Dimethyl 2,2-dichlorovinylphosphate (DDVP)	41.4%	62-73-7
Other ingredients	58.6%	

**OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)**

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
Dichlorvos (62-73-7)	POISON	1.0 mg/m <sup>3</sup>	0.90 mg/m <sup>3</sup>
Petroleum Hydrocarbons (64742-94-5)	Combustible		
Naphthalene (91-20-3)	OSHA PEL/ ACGIH TLV	50 ppm	10 ppm
1,2,4-Trimethylbenzene (95-63-6)		25 ppm	25 ppm

\* Exposure Limits 8 hrs. TWA

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**3. HAZARDS IDENTIFICATION**

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**EMERGENCY OVERVIEW:**

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**DANGER! POISON! Poisonous if swallowed, inhaled or absorbed through skin and eyes. Rapidly absorbed through skin. Repeated inhalation or skin contact may, without symptoms, progressively increase susceptibility to Dichlorvos (DDVP) poisoning.**

**CAUTION! COMBUSTIBLE! Keep away from sources of ignition.**

**KEEP AWAY FROM CHILDREN!**

**Toxic to fish. Do not contaminate bodies of water.**

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**POTENTIAL HEALTH EFFECTS**

**ROUTE(S) OF ENTRY:** May be fatal if absorbed through the eye or skin, is ingested or is inhaled.

**SIGNS OF ACUTE OVEREXPOSURE:** Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases, unconsciousness, convulsions, severe respiratory depression and death may occur. It should also be noted that because of the presence of petroleum distillates, product is mildly irritating to the skin at levels in excess of those that cause toxic signs from the presence of Dichlorvos (DDVP). Prolonged or repeated liquid contact can result in defatting and drying of the skin, which may result in skin irritation and dermatitis. Vapors of petroleum distillates may produce CNS (Central Nervous System) depression.

**SIGNS OF CHRONIC OVEREXPOSURE:** Repeated exposures to small doses of Dichlorvos (DDVP) and other organophosphates may lower the cholinesterase to levels where the above symptoms of acute overexposure are observed. Repeated exposure to the petroleum distillates solvent may lead to severe CNS depression. Typically the exposures to Dichlorvos (DDVP) will cause toxicity problems well before any problems from the solvent arise.

**CARCINOGENICITY:** EPA has classified Dichlorvos (DDVP) as being in category C, a possible carcinogen. IARC lists Dichlorvos (DDVP) as being possibly carcinogenic to humans (Group 2B). **CARE SHOULD BE EXERCISED IN HANDLING DICHLORVOS (DDVP) AND ITS FORMULATIONS.**

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**3. HAZARDS IDENTIFICATION, cont'd**

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Preexisting conditions which lower cholinesterase levels increase vulnerability to cholinesterase depression. These include: (for plasma) genetic cholinesterase deficiency; advanced liver disease; chronic alcoholism; malnutrition; dermatomyositis; existing toxicity from exposure to carbon disulfide; benzalkonium salts, organic mercury compounds, ciguatoxins or solanines; and (for RBC) hemolytic anemias. In addition, near fatal exposures may result in congestive effects to a wide variety of organs based on the presence of Xylene.

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**4. FIRST AID MEASURES**

**DICHLORVOS (DDVP) IS A CHOLINESTERASE INHIBITOR. A PHYSICIAN SHOULD BE CONTACTED IN ALL CASES OF EXPOSURE TO DICHLORVOS (DDVP) AND ITS FORMULATIONS.**

**CAUTION:** Persons attending victim should avoid direct contact with heavily contaminated clothing or vomitus. Rubber gloves should be worn by the emergency responder or medical personnel while washing the pesticide from skin and hair of the exposed victim.

**EYES:** Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately AT 1-800-301-7976. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

**INHALATION:** Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately.

**INGESTION:** Induce vomiting immediately by giving two glasses of water and giving Syrup of Ipecac according to directions on the bottle or by sticking finger down throat. **CAUTION:** Make certain the vomitus is not inhaled into the lungs, as it can cause pneumonia. Have the person sit up while vomiting to help prevent aspiration of the vomitus. Never give anything by mouth to an unconscious or convulsing person. Contact a physician immediately.

**SKIN:** Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. Contact a physician immediately.

**NOTE TO PHYSICIANS:** This is an Organophosphate (OP) Insecticide. Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. Contact your local poison control center for further recommendations regarding control of poisoning, emergency treatment, and other information regarding the toxicity of Dichlorvos (DDVP). A possible method of treatment is given below:

Establish airway and oxygenation. IV Atropine sulfate is the antidote of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, Atropine Sulfate should be injected at 10 minute intervals in doses of 1 to 2 milligrams until complete atropinization has occurred. Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinization. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion, in

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**4. FIRST AID MEASURES, cont'd**

250 cc of saline over a 15 to 20 minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5% solution in water over not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children, the dose of 2-PAM is 0.25 grams. Avoid morphine, aminophylline, phenothiazine, reserpine, furosemide and ethacrynic acid. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may without warning cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been attained as determined by a blood test.

Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) followed by water (2 glasses for adults, 1 glass for children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

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**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES**

Flash Point: 147°F (TCC)

Autoignition Temperature: 830°F (approximate)

Flammable Limits:

Lower flammable limit: 1.8% @ 77°F

Upper flammable limit: 11.7% @ 77°F

**EXPLOSIVITY**

Mechanical Impact: Will not occur

Static Discharge: Due to the solvent, this product can accumulate static charges which can cause an incendiary electrical discharge. Even empty containers may contain sufficient residues to cause an explosion.

**HAZARDOUS COMBUSTION PRODUCTS:** This product will emit toxic fumes when burned, including carbon monoxide. Vapors of the unburned product may also be hazardous. Contact with the fumes and vapors should be avoided by staying upwind and by wearing impervious clothing and positive pressure self-contained breathing apparatus.

**EXTINGUISHING MEDIA:** Foam, dry chemical, carbon dioxide, water spray (fog).

**FIRE FIGHTING INSTRUCTIONS:** Evacuate nonessential personnel from the area. Keep upwind.

Wear self-contained breathing apparatus and impervious clothing, including gloves and eye protection. Clean all clothing before reuse. Severely contaminated clothing cannot be adequately decontaminated, and must be disposed as a hazardous waste. Shower with soap and water after contact with this product.

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### 6. ACCIDENTAL RELEASE MEASURES

**GENERAL:** Evacuate personnel and thoroughly ventilate the area. Remove sources of heat, sparks, flame, impact, friction or electricity. If unable to extinguish fire, let burn until consumed. Use sparkproof equipment for cleanup. Use adequate ventilation and air-supplied respirators, as well as impervious clothing and safety goggles. Keep bystanders upwind and away from the spill.

**SMALL SPILL:** Cover with absorbent (clay, sawdust, straw, kitty litter, etc.), to absorb the liquid. Sweep into an open drum. Clean the area with common powdered household detergent and a stiff brush and just enough water to make a slurry. Absorb and sweep into the same open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly.

**LARGE SPILL:** Dike the spill to prevent contamination of local water sources. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

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### 7. HANDLING AND STORAGE

**HANDLING:** Prevent skin contact. Do not breathe fumes. Wear appropriate personal protective equipment (PPE, Section 8). Wash thoroughly and change clothes after handling. Wash clothes separately; do not wash heavily contaminated clothing. Dispose of heavily contaminated clothing as a hazardous waste. Keep product away from food, drink, cosmetics, and tobacco products. See product label for more detailed handling procedures.

**STORAGE:** Do not contaminate water, food or feed by storage or disposal. Store product in a cool, dry, locked place out of reach of children. Store in original container.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** A well-ventilated area is recommended for handling Prozap® Vapona 400E. Use of mechanical or local exhaust systems is recommended. See label or contact your distributor for more complete instructions.

**RESPIRATORY PROTECTION:** A NIOSH/MSHA approved air-purifying respirator equipped with organic vapor cartridges or canisters is required when anyone is working with or near open containers of this product. For emergency and other conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. See label or contact your distributor for more complete instructions.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION, cont'd**

**SKIN PROTECTION:** Anyone working with or near open containers of this product must wear the following protective equipment: a protective suit of one or two pieces that covers all parts of the body except head, hands, and feet; chemical resistant gloves (i.e. Nitrile); chemical resistant shoes (or chemical resistant coverings or boots); goggles or faceshield; hood or wide brimmed hat. Always wash hands, face, and arms with soap and clean water before eating, drinking, using cosmetics, smoking, or going to the toilet. For more information see the product label or contact your distributor.

**EYE PROTECTION:** Goggles or safety glasses and a faceshield are required for anyone who is working with or near open containers of this product. See label or contact your distributor for more complete instructions.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Amber liquid
<b>Odor:</b>	Petroleum distillates odor
<b>Odor Threshold:</b>	Not available
<b>Boiling Point:</b>	363 - 401 °F (184 - 205 °C)
<b>Freezing/Melting Point:</b>	Not available
<b>Specific Gravity:</b>	1.07 g/mL
<b>Bulk Density:</b>	8.93 lb/gal
<b>Vapor Pressure (mm/Hg):</b>	Not available
<b>Vapor Density:</b>	Heavier than air
<b>Percent Volatile by Vol:</b>	Not available
<b>Solubility in Water:</b>	Emulsifies
<b>Solubility (Other):</b>	Soluble in aromatic solvents
<b>Partition Coefficient (O/W):</b>	Not available
<b>pH (1% emulsion in water):</b>	3.9
<b>Evaporation Rate:</b>	0.1 (compared to n-Butyl acetate = 1.0)

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**10. STABILITY AND REACTIVITY**

**CHEMICAL STABILITY (Conditions to avoid):** This product is stable under normal use and storage conditions.

**INCOMPATIBILITY:** Avoid strong oxidizers, strong acids, strong bases, heat, and sources of ignition.

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**10. STABILITY AND REACTIVITY, cont'd**

**HAZARDOUS DECOMPOSITION PRODUCTS:** Heating product to decomposition will cause emission of acrid smoke and fumes of hydrogen chloride, phosphorous oxides, and carbon oxides.

**HAZARDOUS POLYMERIZATION:** This product will not polymerize.

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**11. TOXICOLOGICAL INFORMATION**

No data is available for this product. Listed below is information on the active ingredient, Dichlorvos, for use in determining the toxicological characteristics of this product.

<b>INGESTION:</b>	Oral LD <sub>50</sub> (rat):	56 mg/kg
<b>INHALATION:</b>	Inhalation LC <sub>50</sub> (rat):	140 mg/m <sup>3</sup> (whole body, mist)
<b>DERMAL:</b>	Skin LD <sub>50</sub> (rabbit):	205 mg/kg
<b>IRRITATION:</b>	Eye irritation:	Irritant
	Skin irritation:	Irritant

**SENSITIZATION:** Skin (guinea pig): Possible sensitizer

**TERATOGENICITY:** No evidence of teratogenicity in laboratory animals.

**MUTAGENICITY:** No in vivo mutagenicity activity in mammalian assay systems.

**CARCINOGENICITY:** EPA has classified Dichlorvos (DDVP) as being in category C, a possible carcinogen. IARC lists Dichlorvos (DDVP) and Naphthalene as being possibly carcinogenic to humans (Group 2B). **CARE SHOULD BE EXERCISED IN HANDLING DICHLORVOS (DDVP) AND ITS FORMULATIONS.**

**REPRODUCTIVE TOXICITY:** Reproductive effects have only been seen at a dose level which produced a generalized toxicity in the rat.

**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** No data available.

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**12. ECOLOGICAL INFORMATION**

This product is toxic to fish, birds, and other wildlife. Keep out of any body of water. Do not contaminate water when disposing of equipment washwaters or wastes.

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### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of local or national laws. If these wastes cannot be disposed by use according to label or other regulatory instructions, contact your nearest local or national waste regulatory agency for guidance.

**Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of container in a sanitary landfill or by incineration or other methods approved by national and local authorities. Check with the appropriate national or local agencies to determine currently applicable regulations for your area.

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### 14. TRANSPORTATION INFORMATION

DOT Class	: 6.1 (NOTE: Canada requires 6.1, 9.2)
UN Number	: 3018
IMDG Class (sea)	: 6.1 (Page 6219)
IATA (air)	: 6.1
Marine Pollutant	: Yes
Packing Group	: III
Hazard label(s)	: Toxic
ADR Class (road)	: 6.1
Proper shipping name(s)	: Organophosphorus pesticide(s), liquid, toxic, (Dichlorvos) (NOTE: Canada requires n.o.s.)
Reportable Quantity	: Yes

#### PACKAGING

General description	: 2½ gallon bottle
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### 15. REGULATORY INFORMATION

#### **U.S. FEDERAL REGULATIONS:**

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

**CANADIAN REGULATIONS:** This product is not registered in Canada.

**EUROPEAN UNION REGULATIONS:** This product is not registered in the European Union.

#### **SARA TITLE III DATA**

##### **Section 311 & 312 Hazard Categories:**

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	Yes
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No



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### **15. REGULATORY INFORMATION, cont'd**

**Section 302 Extremely Hazardous Substances:** Dichlorvos (DDVP), 62-73-7)

**Section 313 Toxic Chemicals:** Dichlorvos (DDVP), 62-73-7) 41.4 % (w/v);

Naphthalene (91-20-3) 10%(v/v); 1,2,4-Trimethylbenzene (95-63-6) 1.7% (v/v)

**CERCLA Reportable Quantities (RQ):** Dichlorvos - 10 lbs; Naphthalene - 100 lbs; Product - 20 lbs

#### **STATE REGULATIONS:**

**CALIFORNIA (Proposition 65):** This product contains chemicals known to the State of California to cause cancer - Dichlorvos (DDVP) (CAS: 62-73-7) and Naphthalene (CAS: 91-20-3).

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### **16. OTHER INFORMATION**

#### **MSDS Status:**

**Date This Revision:** 4/22/03

**Date Previous Revision:** 2/16/00

**Reasons for Revision:** New data required changes to section 1, 5,14 AND 15.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Chem-Tech, Ltd. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will Chem-Tech, Ltd. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

#### **ABBREVIATIONS:**

ACGIH	-	American Conference of Governmental Industrial Hygienists
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act
DOT	-	Department of Transportation (USA)
IMDG	-	International Maritime Dangerous Goods
IATA	-	International Air Transport Association

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