

Material Safety Data Sheet

RAVAP® EC

Version: Original

Date Issued: 2/06/08

MSDS No. 6148350

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY: KMG- Bernuth, Inc.
10611 Harwin, Suite 402
Houston, Texas 77036

PHONE NUMBER: 800-322-8177

EMERGENCY PHONE: CHEMTREC: 1-800-424-9300

NAME USED ON LABEL: RAVAP EC

PRODUCT USE: Livestock, Poultry and Premise Insecticide Spray

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>IDENTITY</u>	<u>CAS NUMBER</u>	<u>TYPICAL %</u>	<u>OTHER INFORMATION</u>
Tetrachlorvinphos (z)-2-Chloro-1-(2,4,5-trichlorophenyl) vinyl dimethyl phosphate	22248-79-9	23.0 %	Active Ingredient
Dichlorvos 2,2-Dichlorovinyl dimethyl phosphate	62-73-7	5.3 %	Active Ingredient
Phenol	108-95-2	14.0 %	Inert Ingredient

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

SECTION 3: HAZARDS IDENTIFICATION

PHYSICAL HAZARDS: Combustible. Do not use, pour, spill or store near heat or open flame. Do not use with thermal foggers or heat-generating devices.

HEALTH HAZARDS: DANGER- Corrosive. Causes irreversible eye damage or skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes (including animals), on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing be reuse.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless told to by a poison control center or doctor.

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SECTION 4: FIRST AID MEASURES - CONTINUED

HOTLINE NUMBER: Contains an organophosphate that inhibits cholinesterase. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Contact 1-800-322-8177 for emergency medical treatment.

NOTE TO PHYSICIAN: This product is a cholinesterase inhibitor. If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered, but only in conjunction with atropine. Product may cause aspiration pneumonia. Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5: FIREFIGHTING MEASURES

FLASH POINT: 67.8°C (154°F) ASTM D 93-02a

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (STP): Not available. Product is Combustible

EXTINGUISHING MEDIA: For small fire, use dry chemical, carbon dioxide, water spray or foam. For large fire, use water spray, fog or foam. Cool containing vessels with water in order to prevent pressure build-up, auto-ignition or explosion. Contain run-off to prevent contamination of surface waters.

PROTECTIVE EQUIPMENT: Self-contained breathing apparatus with full facepiece and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible. Noxious fumes (carbon monoxide and hydrogen chloride) may be emitted under fire conditions.

HMIS RATING: Health 2 Fire 3 Reactivity 0 PPE I

NFPA RATING: 0 Least; 1 Slight; 2 Moderate; 3 High; 4 Severe
Health 2 Fire 3 Reactivity 0

SECTION 6: ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak: Wear long-sleeved shirt and long pants, rubber boots over shoes and socks, chemical resistant waterproof gloves, protective chemical safety goggles and a NIOSH-approved pesticide respirator or Air-supplied respirator. For small spills, absorb on absorbent material, sweep up and place in an approved chemical container. Use non-sparking tools and remove ignition sources.

Wash the spill area with a solution of water and household bleach (1:2), absorb on absorbent material, sweep up and place in a disposal container. Wash area with detergent and absorb liquid and sweep up and place into container. Seal the container and handle in an approved manner.

Flush the area with water to remove any residue. Contain any washwaters. Do not allow washwaters to contaminate surface waters and do not flush to sewer systems.

For disposal, refer to Section 13, Disposal Considerations.

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SECTION 7: HANDLING AND STORAGE

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in original container only. Store at temperatures above 32°F. **Combustible. Do not use, pour, spill or store near open flame.** Do not store diluted product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

DANGER

Corrosive. Causes irreversible eye damage or skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes (including animals), on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are butyl rubber, neoprene and polyvinyl chloride (PVC). If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves for mixers and loaders supporting applications and all handlers supporting or using backpack or low pressure spray applications.
- Protective eyewear
- Chemical resistant apron when cleaning equipment, mixing or loading.
- Double layer clothing and gloves are required when handling back-rubber devices.

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Do not enter or allow others to enter the treated areas until sprays have dried.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

OCCUPATIONAL EXPOSURE LIMITS:

AEL Recommended	5 mg/m ³
ACGIH TLV	100 ppm
OSHA PEL	100 ppm

OCCUPATIONAL EXPOSURE STANDARDS: Not established

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION - CONTINUED

VENTILATION: Provide exhaust ventilation or other engineering controls to keep exposure to airborne contaminants below the exposure limit.

EYE PROTECTION: See **PERSONAL PROTECTIVE EQUIPMENT (PPE)** above.

BODY PROTECTION: See **PERSONAL PROTECTIVE EQUIPMENT (PPE)** above.

RESPIRATORY PROTECTION: None required but recommend MSHA-NIOSH approved respirator for organic vapors and mists.

OTHER PROTECTIVE EQUIPMENT: Eyewash station and safety shower in work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FORMULATION:	Emulsifiable Concentrate
PHYSICAL STATE:	Liquid
COLOR:	Clear Amber
ODOR:	Aromatic odor
BOILING POINT:	>350°F
MELTING POINT:	Not applicable
FREEZING TEMPERATURE:	Not available
VAPOR PRESSURE:	Not available
VAPOR DENSITY:	Not available
EVAPORATION RATE:	Not available
SPECIFIC GRAVITY:	1.055 (Water = 1.0)
BULK DENSITY:	8.84 lbs/gal
SOLUBILITY IN WATER:	Miscible
pH VALUE:	Not available
% VOLATILES, 1 Hr @ 230°F:	58.98

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable
CONDITIONS TO AVOID:	Excessive heat and sunlight
MATERIALS TO AVOID:	Strong acids
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon and phosphorus and hydrochloric acids. Incomplete combustion may lead to formation of carbon monoxides and/or other asphyxiates.
HAZARDOUS POLYMERIZATION:	Will not occur.

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SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE ORAL LD ₅₀ (RAT):	500 mg/kg
ACUTE DERMAL LD ₅₀ (RABBIT):	>2000 mg/kg
ACUTE INHALATION (RAT – 4 HR LC ₅₀):	2.16 mg/l (no deaths)
PRIMARY EYE IRRITATION (RABBIT):	Irritant
PRIMARY DERMAL IRRITATION (RABBIT):	Irritant
DERMAL SENSITIZATION:	May cause sensitization in some individuals.
Not a Known Carcinogen	

EFFECTS OF OVEREXPOSURE:

Acute overexposure may cause irreversible eye damage or skin burns.. Harmful if swallowed or absorbed through skin. Do not get in eyes (including animals), on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. May result in acute cholinesterase depression. Symptoms of cholinesterase inhibition are burning of skin and mouth, headache, dizziness, blurred vision, pin-point pupils, nausea, stomach cramps, muscle twitching. In extreme cases, unconsciousness, convulsions and severe respiratory depression may occur.

Chronic overexposure:

TCVP - According to the USEPA (RED, 1995), Tetrachlorvinphos did not cause organophosphate induced delayed neurotoxicity in hens(OPIDN) in the hen following single or multiple (21 days) exposures. Following single oral doses to rats, transient neurotoxic effects were observed in both sexes on day at the two highest (325 and 650 mg/kg); these effects were consistent with cholinesterase inhibition. All rats were normal by day 14 with no indication of any permanent behavioral changes or of any adverse neuropathological effects. Subchronic and chronic oral exposure in rats and dogs resulted in decreased plasma cholinesterase activity and reduced red blood cells. The carcinogenic potential of tetrachlorvinphos as been classified as a group C (possible human) carcinogen by the USEPA Carcinogenity Peer Review Committee of the Agency's Office of Pesticide Programs.

DDVP – According to the USEPA (RED 2006), Dichlorvos did not cause organophosphate induced delayed neurotoxicity (OPIDN) in the hen following single or multiple (28 days) exposures. Following a single oral dose to rats, dichlorvos was associated with a variety of neurological and physiological changes. Subchronic and chronic oral exposures in rats and dogs as well as chronic inhalation exposure in rats resulted in significant decreases in plasma, red blood cell and/or brain cholinesterase activity. The carcinogenic potential of dichlorvos has been classified as “suggestive” under the 1999 Draft Agency Cancer Guidelines and no quantitative assessment of cancer risk is required. There was no evidence of increased susceptibility following *in utero* exposures to rats and rabbits as well as pre/post natal exposure to rats. Also, there was no evidence of abnormalities in the development of the fetal nervous system in the frbrlopmrnysl/neurotoxicity studies submitted to the Environmental Protection Agency.

SECTION 12: ECOLOGICAL INFORMATION

This product is toxic to fish, birds, and other wildlife. Drift and runoff may be hazardous to aquatic organisms in adjacent areas. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or when disposing of equipment wash waters.

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SECTION 13: DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide wastes are acutely toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: DO NOT reuse empty container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS

DOT PROPER SHIPPING NAME:

For containers 1 gallon (4L) or less: CONSUMER COMMODITY, ORM-D PER 49 CFR 173.153(C)

For containers 2.5 – 5 gallons : UN3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (TETRACHLORVINPHOS, DICHLORVOS), 6.1, III, MARINE POLLUTANT (DICHLORVOS)

For containers 21-119 gallons : UN3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (TETRACHLORVINPHOS, DICHLORVOS), 6.1, III, MARINE POLLUTANT (DICHLORVOS), RQ (DICHLORVOS)

IATA/CAO CLASSIFICATION:

UN3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, COMBUSTIBLE (TETRACHLOROVINSPHOS, DICHLORVOS), 6.1, (3), III

IMO CLASSIFICATION:

UN3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, COMBUSTIBLE (TETRACHLOROVINPHOS, DICHLORVOS), 6.1, (3), III, MARINE POLLUTANT (DICHLORVOS), FP 67.8 C cc, EMS F-E, S-D

SECTION 15: REGULATORY INFORMATION

UNITED STATES EPA: EPA Reg. No. 61483-50
EPA Signal Word – DANGER

OTHER:

SARA Hazard Notification/Reporting

Immediate Y Fire Y Sudden Release of Pressure N
Delayed Y Reactive N

SARA 302-304 (40CFR 350): Dichlorvos – 62-73-7, extremely hazardous substance (EHS)
SARA 313, TOXIC CHEMICALS: Dichlorvos – 62-73-7, 1000 pounds; Phenol – 108-95-2 1000 pounds
REPORTABLE QUANTITIES: Dichlorvos – 62-73-7 10 lbs., Phenol 108-95-2 1000 lbs.
CALIFORNIA PROPOSITION 65: This product contains ingredients known to the State of CA to cause cancer or reproductive toxicity.

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SECTION 16: OTHER INFORMATION

Reason for MSDS Revision: New Formulation

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 KMG-Bernuth, Inc. (Company). makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Company 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.

MSDS No.: 6148350

Revision No.: Original

Supersedes: N/A

Date: Feb 6, 2008

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