

MATERIAL SAFETY DATA SHEET

DATE PREPARED: 10/15/1996

MSDS No: 3896

SOLARIS

ORTHO Diazinon PLUS Insect Spray

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ORTHO Diazinon PLUS Insect Spray
PRODUCT DESCRIPTION: Insecticide

MANUFACTURER

The SOLARIS Group
of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

EPA REG. NO.: 239-2364C PN: 6019

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-454-2333

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS Registry #</u>
Diazinon, O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) Phosphorothioate	25	333-41-5
INERT INGREDIENTS	~ 74.99	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 158.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Light amber liquid

IMMEDIATE CONCERNS: - CAUSES MODERATE EYE INJURY

- HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN
- AVOID BREATHING SPRAY MIST
- DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
- COMBUSTIBLE
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES: The undiluted product is moderately irritating to the eyes. Eye contact may include discomfort, tearing, swelling, redness, and blurred vision. See Toxicological Information, section 11.

SKIN: The undiluted product is considered a moderate skin irritant, therefore contact with the skin can cause prolonged (days) injury to the affected area. The degree of injury will depend on the amount of material that gets on the skin and the speed and thoroughness of the first aid treatment. Skin irritation may include redness, itching and swelling. This substance is considered slightly toxic to internal organs if absorbed through the skin. See Toxicological Information, section 11.

INGESTION: This substance is slightly toxic to internal organs if swallowed. The degree of injury will depend on the amount absorbed from the gut. Because of the low viscosity of this substance, it can directly enter the lungs if it is swallowed (this is called aspiration). This can occur during the act of swallowing or when vomiting the substance. Once in the lungs, the substance is very difficult to remove and can cause severe injury to the lungs and death. Read the Toxicological Information section (11) of this document for more information.

INHALATION: Breathing the vapor may be irritating to the respiratory tract. If inhaled, this substance is considered practically non-toxic to internal organs. Read the Toxicological Information section (11) of this document for more information.

TARGET ORGANS: Diazinon is an inhibitor of the cholinesterase enzyme, found in nervous tissue, red blood cells, and plasma.

COMMENTS HEALTH: Depending upon the extent and degree of overexposure to the product, signs and symptoms of cholinesterase inhibition can result following either ingestion, skin contact or inhalation routes of exposure. Signs and symptoms of cholinesterase inhibition can also result from either acute (one time), subchronic (repeated short-term) and chronic (daily life-time) overexposure to the product.

Signs and symptoms of cholinesterase inhibition usually occur within 12 hours following overexposure. These effects may include, but may not be limited to, headache, dizziness, weakness, nausea, vomiting, diarrhea, constriction of the pupil of the eye, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating and abdominal cramps. Incontinence, unconsciousness, convulsions and breathing difficulties are indicative of severe poisoning. In untreated severe poisoning, death is due to respiratory failure or cardiac arrest.

This product also contains a petroleum distillate. Depending upon the degree of overexposure, the systemic toxicity of the product may be of less concern than the potential clinical complications that can result from aspiration of the petroleum distillate into the lungs if the product is either swallowed or vomited.

4. FIRST AID MEASURES

EYES: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Call a physician.

SKIN: Remove contaminated clothing. Wash skin thoroughly with soap and water. See a doctor if any signs or symptoms described in this document occur. Discard contaminated non-waterproof shoes and boots. Wash contaminated clothing.

INGESTION: If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

INHALATION: If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

NOTES TO PHYSICIAN: This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone. This material contains light hydrocarbon liquid and an aspiration hazard may exist.

ADDITIONAL INFORMATION: In case of medical emergencies involving this product, call day or night, (800) 457-2022 OR (800) 454-2333.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 153°F TAG CC

EXTINGUISHING MEDIA: CO₂, dry chemical, foam and water fog.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.

FIRE FIGHTING PROCEDURES: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85 F.

Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Soak up spilled material with paper towels or other absorbent material and discard in trash. Product is highly flammable. Keep all sources of ignition away from spill.

LARGE SPILL: Eliminate all sources of ignition in vicinity of spill or released vapor.

Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgate, bentonite or other absorbent material. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES: Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed, foodstuffs and domestic water supplies. Store in a cool dry place, preferably in a locked storage area. Do not store diluted spray. Store above freezing. Handle concentrate in a ventilated area. Keep container closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design of exhaust systems.

PERSONAL PROTECTION

EYES AND FACE: Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

For application of product in accordance with label instructions, no special eye protection is needed.

SKIN: Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type of glove for given application. Wear face shield and chemical resistant clothing such as a rubber apron when splashing is likely. Wash contaminated skin promptly. Launder contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

RESPIRATORY: Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment (full facepiece recommended) when airborne exposure limits are exceeded (see below). Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 C.F.R. 1910.134.

For application of product in accordance with label instructions, no special respiratory protection is required.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>ACGIH STEL</u>
O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) Phosphorothioate	TWA 0.1 mg/m ³	0.1 mg/m ³	None
Aromatic Hydrocarbon Blend	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Clear, light amber liquid with characteristic organo-phosphate odor

PERCENT VOLATILE: No Data Available

SOLUBILITY IN WATER: Miscible with water.

SPECIFIC GRAVITY: 0.936 to 0.948 gr/cc at 20°C

COMMENTS:

pH: 6.78 @ 5% Solution in water.

DENSITY: 7.8 - 7.9 lb/gal

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Avoid contact with acids and bases.

HAZARDOUS DECOMPOSITION: Hazardous decomposition products include, but are not limited to, various aliphatic organophosphates, substituted pyrimidines and hydrogen cyanide.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: The results of the rabbit eye irritation study indicate that this product is moderately irritating to eyes with all irritation clearing by day 7. EPA FIFRA toxicity category - III.

DERMAL LD₅₀: Slightly toxic, (Rat LD50 >2,020 mg/Kg). EPA FIFRA toxicity category - III. Slightly irritating to skin (Rabbit). EPA FIFRA toxicity category - IV.

ORAL LD₅₀: This product is slightly toxic if ingested. Rat LD50 = 1,250 mg/kg. EPA FIFRA Toxicity Category - III.

INHALATION LC₅₀: This product if inhaled is practically nontoxic. 4 hour inhalation LC50 for rats > 2.33 mg/liter/hour. EPA FIFRA toxicity category - IV.

SENSITIZATION: No evidence of allergic skin reactions was observed in guinea pigs following repeated skin exposure.

CARCINOGENICITY:

CARCINOGENICITY COMMENTS: Diazinon is not considered to be a carcinogen. NTP chronic feeding studies in rats and mice demonstrated no evidence of oncogenicity.

Rat no observable effect level (NOEL): 40 mg/kg/dy
Mice NOEL: approx. 30 mg/kg/dy

A search of the EPA's Integrated Risk Information System (IRIS) found no evidence of human carcinogenicity.

NEUROTOXICITY: Diazinon is not considered to produce organophosphate induced delayed neuropathy. Results of chicken neurotoxicity studies were negative.

TERATOGENICITY: Diazinon is not considered to be a teratogen (a substance that causes birth defects). The rat and rabbit developmental NOEL's (no observable effect level) were 20 and 100 mg/kg/dy, respectively.

REPRODUCTIVE TOXIN: Diazinon is not considered to be a reproductive toxin.

Results of a rat multigeneration reproduction study indicated that the daily dietary NOEL (No Observable Effect Level) for diazinon was 0.5 mg/kg/dy. The maternal maximum tolerated dose was 25 mg/kg/dy.

COMMENTS: See Section 16 for definition of EPA FIFRA toxicity categories.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: No data available.

ECOTOXICOLOGICAL INFORMATION: This material is toxic to birds and other wildlife. Highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. This material is toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

PRODUCT DISPOSAL: The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Consumer Commodity, ORM-D, RQ (Diazinon)

PRIMARY HAZARD CLASS/DIVISION: ORM-D

UN/NA NUMBER: NONE

PACKING GROUP: NO

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 1 Lb. ai

U.S. SURFACE FREIGHT CLASS: NMFC NBR. 102120

AIR (ICAO/IATA)**PROPER SHIPPING NAME:** Consumer Commodity**VESSEL (IMO/IMDG)****MARINE POLLUTANT #1:** Diazinon - Severe Marine Pollutant**SPECIAL SHIPPING NOTES:** The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE: YES	CHRONIC: NO	FIRE: YES	REACTIVITY: NO	PRESSURE GENERATING: NO

313 REPORTABLE INGREDIENTS: Diazinon (CAS 333-41-5). De Minimis Concentration for Section 313 of EPCRA is 1.0%.**CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)****CERCLA RQ:** 1 Lb. of Diazinon and Pyrethrin.**TSCA (TOXIC SUBSTANCE CONTROL ACT)****TSCA REGULATORY:** All non FIFRA regulated components are on the US EPA's TSCA Inventory List.**16. OTHER INFORMATION****HMIS CODES****FIRE: 2 HEALTH: 2 REACTIVITY: 0 PROTECTION: -****NFPA CODES****FIRE: 2 HEALTH: 2 REACTIVITY: 0 SPECIAL: -****APPROVAL DATE:** 12/06/1996

REVISION SUMMARY Revision #: 2

This MSDS replaces the June 30, 1995 MSDS. Any changes in information are as follows:

In Section 1
Date Prepared

In Section 8
Engineering Controls (text) Skin Protection (text) Eyes-Face Protection (text) Respiratory Protection (text)

In Section 9
(Group Field) for pH (pH) (text) (Group Field) for Vapor Pressure (Group Field) for Boiling Point (Group Field) for Freezing Point (Group Field) for Specific Gravity Specific Gravity (From) Specific Gravity (To) Specific Gravity (Unit) Specific Gravity °C (Group Field) for Evaporation Rate (Group Field) for Viscosity

In Section 11
Acute Eye (text) Dermal LD50 (text) Carcinogenicity (text) Neurotoxicity (text) Oral LD50 (text) Inhalation LC50 (text) Teratology (text) Reproduction (text) Section 11 Footnotes Sensitization (text)

In Section 16
Manufacturer Supplemental Notes (text)

MANUFACTURER SUPPLEMENTAL NOTES: EPA FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) Toxicity Categories: The EPA toxicity categories are based on the results of the acute toxicology studies. The toxicology findings are compared to the FIFRA criteria to determine the product label signal word, precautionary and first aid statements. The EPA FIFRA toxicity category summary:

EPA FIFRA Product Label Toxicity Rating
Toxicity Category Signal Word

I DANGER Most toxic and irritating
II WARNING
III CAUTION
IV CAUTION Least toxic and irritating

COMMENTS: For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER: This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group 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 WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.