

# MATERIAL SAFETY DATA SHEET

DATE PREPARED: 06/05/1996

MSDS No: 5579

SOLARISORTHO® Multi-Purpose Fungicide DAONIL 2787® Plant  
Disease Control

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** ORTHO® Multi-Purpose Fungicide DAONIL 2787® Plant Disease Control**PRODUCT DESCRIPTION:** Fungicide

### MANUFACTURER

The SOLARIS Group

of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

### 24 HR. EMERGENCY TELEPHONE NUMBERS

**Emergency Phone** 800-454-2333**EPA REG. NO.:** 239-2522B **PN:** 6025-A

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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS Registry #</u>
Chlorothalonil, Tetrachloroisophthalonitrile	29 .6	1897-45-6
INERT INGREDIENTS	~ 70 .4 0	

"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.

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## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Liquid suspension of gray particles

**IMMEDIATE CONCERNS:** - CAUSES EYE AND SKIN IRRITATION

- DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
- MAY CAUSE A TEMPORARY ALLERGIC EYE OR SKIN REACTION
- MAY CAUSE A TEMPORARY ALLERGIC RESPIRATORY REACTION
- KEEP OUT OF REACH OF CHILDREN

## **POTENTIAL HEALTH EFFECTS**

**EYES:** This substance causes eye irritation. May also cause a temporary allergic reaction characterized by redness and swelling of the eyes. Eye irritation may also include redness, swelling and discomfort, tearing and blurred vision.

**SKIN:** This substance causes skin irritation. This substance can cause a temporary allergic skin reaction in some individuals characterized by swelling, redness or rash on exposed skin areas..

**INGESTION:** Ingestion may cause irritation of the digestive tract. Digestive tract irritation may include nausea, vomiting, and diarrhea. If swallowed, this substance is considered practically non-toxic to internal organs.

**INHALATION:** Breathing spray mist may cause a temporary allergic respiratory response or mild bronchial irritation.

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## **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:** If on skin, remove contaminated clothing, wash skin with plenty of soap and water. Wash contaminated clothing before reuse. If irritation persists, see a doctor.

**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 signs or symptoms of respiratory irritation occur, move the person to fresh air. If irritation persists, see a doctor.

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

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## **5. FIRE FIGHTING MEASURES**

**FLASHPOINT AND METHOD:** Nonflammable

**EXTINGUISHING MEDIA:** CO2, Dry Chemical, Foam, Water Fog.

**HAZARDOUS COMBUSTION PRODUCTS:** Normal combustion forms carbon dioxide, water vapor and may produce oxides of nitrogen. Combustion may produce toxic compounds of hydrogen chloride.

**FIRE FIGHTING PROCEDURES:** This material will not burn. Smoke from fires involving this material may present unusual hazards. Avoid breathing smoke and mists. Avoid 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. Read the entire document.

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## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Soak up spilled material with paper towels and discard in trash.

**LARGE SPILL:** Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgate, bentonite or other absorbent clays. 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.

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## 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 and foodstuffs. Store in a cool, dry place, preferably locked storage area.

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## 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.

## PERSONAL PROTECTION

**EYES AND FACE:** Where there is 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.

Attention! Repeated or prolonged contact may cause an allergic skin reaction in some people.

**RESPIRATORY:** Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment (full facepiece recommended) when airborne exposure limits are exceeded (see below). If used, full facepiece replaces need for chemical goggles. 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.

Attention! Repeated or prolonged inhalation may cause an allergic respiratory reaction in some people.

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>
Tetrachloroisophthalonitrile	None	None	None
Propylene Glycol	None	None	None
Silica, amorphous	None	3 mg/m3 Respirable	None
Calcium Silicate	5 mg/m3	10 mg/m3 Total	None

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**APPEARANCE:** Light gray

**pH:** 6 to 8

**PERCENT VOLATILE:** 70

**BOILING POINT:** 100°C @ 760 mm Hg

**FREEZING POINT:** -2°C

**SOLUBILITY IN WATER:** Dispersible in water

**EVAPORATION RATE:** Not Determined

**DENSITY:** 9.66 Lbs/gal at 20°C

**SPECIFIC GRAVITY:** 1.16 to 1.18 gr/cc

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## 10. STABILITY AND REACTIVITY

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

**HAZARDOUS DECOMPOSITION:** May decompose under fire conditions emitting gases and vapors (i.e. hydrogen chloride) which may be toxic and irritating to the respiratory tract.

**INCOMPATIBLE MATERIALS:** Avoid contact with alkaline materials.

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## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**EYES:** Eye irritant (rabbit and monkey); reversible corneal, iridal and conjunctival effects; maximum mean scores (noted at 24 hours): Rabbits - 23.3/110; Monkeys - 25.3/110. This product is considered to be a moderate to severe eye irritant. All irritation clearing by day 21. EPA FIFRA toxicity category - II.

**DERMAL LD<sub>50</sub>:** Practically non-toxic, (Rat) LD50 >5.8 gm/Kg; EPA FIFRA toxicity category - IV. Slightly irritating to skin (Rabbit); EPA FIFRA toxicity category - IV.

**ORAL LD<sub>50</sub>:** This product is practically nontoxic if ingested. Rat LD50 > 17.4 g/kg. EPA FIFRA toxicity category - IV.

**INHALATION LC<sub>50</sub>:** This product if inhaled is practically nontoxic. 4 hour inhalation LC50 for rats > 7.16 mg/liter. EPA FIFRA toxicity category - IV.

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

**GENERAL COMMENTS:** This product contains chlorothalonil. The carcinogenic potential of technical-grade chlorothalonil (97%) has been tested in two rat studies and one mouse study. It was reported to cause an increased incidence of malignant and/or combined malignant and benign kidney tumors in both sexes in both rat studies and in male mice. In addition, increased incidences of malignant forestomach tumors were observed in both sexes of mice and in female rats in one study. Based on the results of these studies, chlorothalonil has been classified as a B2 carcinogen by the US EPA. There is no epidemiology data classifying chlorothalonil as a human carcinogen.

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

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## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** No data available.

**ECOTOXICOLOGICAL INFORMATION:** This material is toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

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## 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.

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## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Not Regulated

**PRIMARY HAZARD CLASS/DIVISION:** None

**UN/NA NUMBER:** NONE

**PACKING GROUP:** NO

**U.S. SURFACE FREIGHT CLASS:** Insecticides, Fungicides, Insect or animal

repellents or vermin exterminators, NOI, Other than poison

## AIR (ICAO/IATA)

**PROPER SHIPPING NAME:** Not Regulated

**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.

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## 15. REGULATORY INFORMATION

### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

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

**311/312 HAZARD CATEGORIES:** Acute and chronic health.

**313 REPORTABLE INGREDIENTS:** Chlorothalonil

#### TSCA (TOXIC SUBSTANCE CONTROL ACT)

**TSCA REGULATORY:** All non FIFRA regulated components are on the US EPA's TSCA Inventory List.

### STATE REGULATIONS

**PROPOSITION 65 STATEMENT:** Chlorothalonil is on the California Prop. 65 list. When this product is used according to the label directions, exposure and thus risk is below the level which requires a Prop 65 warning.

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## 16. OTHER INFORMATION

### HMIS CODES

**FIRE: 0 HEALTH: 2 REACTIVITY: 0 PROTECTION: -**

### NFPA CODES

**FIRE: 0 HEALTH: 2 REACTIVITY: 0 SPECIAL: -**

**APPROVAL DATE:** 12/09/1996

## REVISION SUMMARY Revision #: 1

This MSDS replaces the September 12, 1995 MSDS. Any changes in information are as follows:

In Section 1

Date Prepared EPA Product Number

In Section 3

Potential Health Effects - Inhalation (text)

In Section 8

Engineering Controls (text) Skin Protection (text) Eyes-Face Protection (text) Respiratory Protection (text)

In Section 11

Dermal LD50 (text) Oral LD50 (text) Section 11 Footnotes Sensitization (text)

In Section 15

Proposition 65 Statement (text)

In Section 16

HMIS Health NFPA Health 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



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