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# MATERIAL SAFETY DATA SHEET



DATE PREPARED: 10/08/1996

MSDS No: 5712

ORTHOSEVIN Liquid Brand Carbaryl Insecticide 2

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ORTHO SEVIN Liquid Brand Carbaryl Insecticide 2

PRODUCT DESCRIPTION: Insecticide

### MANUFACTURER 24 HR. EMERGENCY TELEPHONE NUMBERS

The SOLARIS Group

of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

Emergency Phone 800-454-2333

EPA REG. NO.: 239-2628 APN: 6013

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS Registry #</u>
Carbaryl, 1-Naphthyl-N-Methylcarbamate	21.3	63-25-2
INERT INGREDIENTS	~ 78.70	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 8.153). 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: White viscous liquid, almost odorless.

IMMEDIATE CONCERNS: MAY BE HARMFUL IF SWALLOWED

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- AVOID CONTACT WITH EYES, SKIN OR CLOTHING
- AVOID BREATHING SPRAY MIST
- KEEP OUT OF REACH OF CHILDREN

## POTENTIAL HEALTH EFFECTS

**EYES:** This substance is slightly irritating to the eyes. Eye contact may include discomfort, tearing, swelling, redness, and blurred vision. See section 11, Toxicological Information.

**SKIN:** This substance is not expected to cause prolonged or significant skin irritation. This substance is slightly toxic to internal organs if absorbed through the skin. The degree of injury will depend on the amount absorbed. See section 11, Toxicological Information.

**INGESTION:** This substance is slightly toxic to internal organs if swallowed. The degree of injury will depend on the amount absorbed from the gut. See section 11, Toxicological Information.

**INHALATION:** If inhaled, this substance is considered practically non-toxic to internal organs. See section 11, Toxicological Information.

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

**COMMENTS HEALTH:** This product active ingredient is a carbamate and considered to be a reversible cholinesterase inhibitor. Signs and symptoms may appear within 1-2 hours following overexposure and may include, but may not be limited to, headache, constriction of the pupil of the eye, blurred vision, excessive salivation or nasal discharge, profuse sweating, abdominal cramps, nausea, vomiting and diarrhea. Convulsions are rarely seen in carbamate poisoning. In untreated severe poisoning, respiratory depression or cardiac arrest may be fatal.

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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. No additional first aid should be necessary. However, if irritation persists, see a doctor.

**SKIN:** No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing. If irritation occurs, see a doctor.

**INGESTION:** If swallowed call a physician or poison control center: (800) 454-2333. Induce vomiting. Do not induce vomiting or give anything by mouth to an unconscious person.

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

**NOTES TO PHYSICIAN:** In severe poisoning, measurement of blood cholinesterase activity may be used in monitoring exposure, but may not be reliable detectors of carbamate poisoning because enzyme activities may revert to normal within minutes or hours of exposure. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. Do not use 2-PAM.

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**ADDITIONAL INFORMATION** Medical Information: Call day or night, 1-800-454-2333.

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## 5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD** >200°F TAG CC

**EXTINGUISHING MEDIA** Use appropriate agent for surrounding fire - product is not combustible.

**HAZARDOUS COMBUSTION PRODUCTS** Thermal decomposition products may be hazardous. These may include oxides of sulfur, nitrogen, and carbon, and methyl isocyanate.

**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 fire 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 attapulgitone 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 spill 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.

**RELEASE NOTES:** Spills are subject to CERCLA reporting requirements: RQ = 100 lbs. (carbaryl)

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Keep pesticide in original container. Avoid contamination of feed and foodstuffs. Store in a secure cool, dry place.

**STORAGE TEMPERATURE:** 100°F maximum

## 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 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. 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). 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.

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>
1-Naphthyl-N-Methylcarbamate	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	None
Sodium Alkyl naphthalene Sulfonate	None	None	None
Citric Acid	None	None	None
Silica, amorphous	None	3 mg/m <sup>3</sup> Respirable	None
Propylene Glycol	None	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:**Liquid**APPEARANCE:**White viscous liquid, almost odorless**VAPOR PRESSURE:**18.1 mmHg at 20°C**VAPOR DENSITY:**0.62 (Air=1)**BOILING POINT:**212°F @ 760 mm Hg**FREEZING POINT:**27°F**SOLUBILITY IN WATER:**Dispersible in water**DENSITY:**8.88 lbs/gal. at 20°C**SPECIFIC GRAVITY:**1.05 gr/cc at 20°C**VISCOSITY:**No Data Available**COMMENTS:**

pH: 4 - 5 (@ 5% Solution in water.)

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**10. STABILITY AND REACTIVITY****STABLE:** YES**HAZARDOUS POLYMERIZATION:** NO**CONDITIONS TO AVOID:** Do not store in areas that exceed 100° F.**HAZARDOUS DECOMPOSITION:** Thermal decomposition products may be hazardous. These may include oxides of sulfur, nitrogen and carbon, and methyl isocyanate.**INCOMPATIBLE MATERIALS:** Alkalis, strong acids

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**11. TOXICOLOGICAL INFORMATION****ACUTE****EYES:** Found to be moderately irritating to rabbit eyes; irritation cleared by 48 hours. EPA FIFRA toxicity category - III.**DERMAL LD<sub>50</sub>:** Slightly toxic, (Rat LD<sub>50</sub> > 2100 mg/kg). EPA FIFRA toxicity category - III. Negligibly irritating to skin (Rabbit). EPA FIFRA toxicity category - IV.**ORAL LD<sub>50</sub>:** This product is slightly toxic if ingested. Rat LD<sub>50</sub> = 1911 mg/kg. EPA FIFRA Toxicity Category - III.

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**INHALATION LG0:** No product toxicology data available, however the carbaryl technical (99%) rat 4-hour LC50 = 2.5 mg/l. EPA FIFRA toxicity category - IV.

**SENSITIZATION:** No evidence of allergic skin reactions have been associated with carbaryl.

### CARCINOGENICITY:

**CARCINOGENICITY COMMENTS:** Carbaryl has been associated with the development of tumors in high dose groups in both rats and mice in lifetime feeding studies. In the rat and mouse chronic studies, the NOEL (no observable effect level) for oncogenic findings was 7500 and 1000 ppm, respectively.

**NEUROTOXICITY:** Carbaryl is not considered to be a neurotoxin in the sense of producing direct histopathological changes to nerve tissue. Delayed and irreversible neurotoxic effects have not been observed in vertebrate species including man.

**TERATOGENICITY:** Carbaryl is not considered to be a teratogen or a chemical that causes birth defects. Certain developmental changes have been observed in some species when the dose of carbaryl administered to the mother caused signs of toxicity. Results from monkey teratology studies have not demonstrated birth defects even at maternally toxic dose levels.

**MUTAGENICITY:** Carbaryl has demonstrated positive findings when tested in some in vitro systems, however results from in vivo mammalian investigations have been negative.

**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 and estuarine invertebrates, birds and other wildlife. Do not apply directly to water. Do not apply where runoff is likely to occur. This product is highly toxic to bees exposed to direct treatment or residues on plants.

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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.

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

## 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.

## 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

**313 REPORTABLE INGREDIENTS:**Carbaryl. (CAS 63-25-2) De Minimis Concentration for Section 313 of EPCRA is 1.0%.

### CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

**CERCLA RQ:**100 lbs. of Carbaryl.

### TSCA (TOXIC SUBSTANCE CONTROL ACT)

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

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TSCA Inventory List.

STATE REGULATIONS

PROPOSITION 65 STATEMENT Not Listed

16. OTHER INFORMATION

HMIS CODES

FIRE: 1 HEALTH: 1 REACTIVITY: 1 PROTECTION: -

NFPA CODES

FIRE: 1 HEALTH: 1 REACTIVITY: 1 SPECIAL: -

APPROVAL DATE: 12/06/1996

REVISION SUMMARY Revision #: 1

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

In Section 1

Date Prepared

In Section 3

Chronic Effects (text)

In Section 4

Firstaid - Skin (text) Firstaid - Ingestion (text) Additional Information (text)

In Section 8

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

In Section 9

(pH) (Operator) (pH) (From) (pH) (To) (pH) (text) Vapor Pressure (Value) Vapor Pressure (Unit) Vapor Pressure °C Vapor Density # (Group Field) for Boiling Point Boiling °F (From) Boiling Point Method Freezing Point °F (From) Specific Gravity (From) Specific Gravity (Unit) Specific Gravity °C (Group Field) for Percent Volatile

In Section 11

Acute Eye (text) Dermal LD50 (text) Carcinogenicity (text) Neurotoxicity (text) Oral LD50 (text) Inhalation LC50 (text) Teratology (text) Mutagenicity (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



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the results of the acute toxicology studies. The toxicology findings are compared to the FIFRA criteria to determine the product's 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.

