

MATERIAL SAFETY DATA SHEET



SOLARIS

DATE PREPARED: 10/10/1996

MSDS No: 4195

BUG-GETA® PLUS Snail, Slug & Insect Granules

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BUG-GETA® PLUS Snail, Slug & Insect Granules

PRODUCT DESCRIPTION: Molluscicide/Insecticide

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.: 239-2514D PN: 5506-B

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS Registry #</u>
Metaldehyde, Metacetaldehyde	2	108-62-3
Carbaryl, 1-Naphthyl-N-Methylcarbamate	5	63-25-2
INERT INGREDIENTS	~ 93 .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.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Brown or tan pellets or granules

IMMEDIATE CONCERNS: - CAUSES EYE IRRITATION

- MAY BE HARMFUL IF SWALLOWED
- AVOID CONTACT WITH EYES, SKIN OR CLOTHING
- AVOID BREATHING DUST
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

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

SKIN: This substance is not expected to cause prolonged or significant skin irritation. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

INGESTION: Signs and symptoms may be delayed several hours following ingestion. Depending upon the dose, initial effects may be associated with gastrointestinal irritation, e.g. increased salivation, nausea, abdominal pain, vomiting and diarrhea. Other signs and symptoms may include elevated body temperature, mental confusion, muscle cramps and tremors, loss of consciousness, convulsions and coma. In case of severe poisoning, death may be due to cyanosis and respiratory failure. There may also be some liver and kidney involvement and recovery may take several weeks. See section 11, Toxicology Information.

INHALATION: The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if inhaled. This hazard evaluation is based on data from similar materials. Breathing the dust may be irritating to the respiratory tract.

ACUTE EFFECTS: This product contains a methyl carbamate insecticide which is a reversible inhibitor of the enzyme, cholinesterase. Signs and symptoms which may be seen, usually within 12 hours following overexposure, include, but are not limited to, headache, dizziness, weakness, constriction of the pupil of the eye, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating, abdominal cramps, nausea and vomiting. Incontinence, unconsciousness and convulsions indicate severe poisoning. Severe poisoning may result in respiratory depression and cardiac arrest.

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

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 if irritation persists.

SKIN: If on skin, remove contaminated clothing, wash skin with plenty of soap and water. Wash contaminated clothing before reuse.

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: 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.

ADDITIONAL INFORMATION: Medical Information: Call day or night, 1-800-454-2333 OR 1-800-457-2022.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

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

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

FIRE FIGHTING PROCEDURES: 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. Keep containers cool with a water spray. 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: Sweep up material and place in disposable container. Dispose of in accordance with instructions in Section 13. "DISPOSAL".

LARGE SPILL: Clean up spills immediately, observing precautions in Exposure Controls/ Personal Protection section. Vacuum with machines equipped with high efficiency filters or sweep up material and place in a disposable container. Scrub contaminated area with detergent and water using a stiff broom. Pick up liquid with Oil Dry, cat litter, clay, rags or other absorbent and place in a disposable container. Dispose of in accordance with instructions in Section 13. "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. Avoid contamination of feed and foodstuffs. Store in a secure cool, dry place.

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 potential for eye contact, wear chemical goggles and have eye flushing equipment available.

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 dust. Use NIOSH/MSHA approved respiratory protection equipment 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>
Metacetaldehyde	None	None	None
1-Naphthyl-N-Methylcarbamate	5 mg/m ³	5 mg/m ³	None
Kaolin Clay	Respirable 5 mg/m ³	2 mg/m ³	None
3-iodo-2-propynyl butyl carbamate	None	None	None
Oil - 100 Sol. Neutral	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Granular

APPEARANCE: Brown or tan pellets or granules

pH: Not Applicable

SOLUBILITY IN WATER: Not Applicable

DENSITY: 27-33 lbs/cu. ft. at 20°C

PARTICLE SIZE: 6-12 mesh

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Avoid contact with acids.

HAZARDOUS DECOMPOSITION: No Data Available

INCOMPATIBLE MATERIALS: No data available.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Found to be moderately irritating to rabbit eyes; irritation cleared by 72 hours. EPA FIFRA toxicity category - III.

DERMAL LD₅₀: Practically non-toxic, (Rat LD50 = >5000 mg/Kg). Nonirritating to skin (Rabbit). EPA FIFRA Toxicity Category - IV.

ORAL LD₅₀: This product is slightly toxic if ingested. Rat LD50 = 6.9 g/kg (Male), 2.5 g/kg (Female). EPA FIFRA toxicity category - III.

INHALATION LC₅₀: No product toxicology data available.

SENSITIZATION: No evidence of allergic skin reactions have been associated with either metaldehyde or 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: Neither metaldehyde or carbaryl are 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.

Results of metaldehyde developmental toxicity investigations have not demonstrated any adverse teratological or reproductive effects.

MUTAGENICITY: Carbaryl has demonstrated positive findings when tested in some in vitro systems, however results from in vivo mammalian investigations have been negative. Metaldehyde has not demonstrated evidence of mutagenic potential.

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

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This material is toxic to birds and other wildlife. This material is extremely toxic to aquatic and estuarine invertebrates and toxic to birds and other wildlife. Keep product 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 empty container. Discard container 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

16. OTHER INFORMATION

HMIS CODES

FIRE: 1 HEALTH: 1 REACTIVITY: 0 PROTECTION: -

NFPA CODES

FIRE: 1 HEALTH: 1 REACTIVITY: 0 SPECIAL: -

APPROVAL DATE: 12/09/1996

REVISION SUMMARY Revision #: 1

This MSDS replaces the September 11, 1995 MSDS. Any changes in information are as follows:

In Section 1
Date Prepared

In Section 3
Chronic Effects (text) Potential Health Effects - Ingestion (text)

In Section 8

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

In Section 9

(Group Field) for Vapor Pressure (Group Field) for Boiling Point (Group Field) for Freezing Point (Group Field) for Melting Point Density (lbs) Density °C Particle (Value) Particle (Unit) Specific Gravity (text) (Group Field) for Percent Volatile Percent Volatile

In Section 11

Acute Eye (text) Dermal LD50 (text) Carcinogenicity (text) Neurotoxicity (text) Oral LD50 (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 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.