SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>LARVIN® BRAND 3.2 THIODICARB INSECTICIDE/OVICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Thiodicarb</td>
</tr>
<tr>
<td>Synonym</td>
<td></td>
</tr>
<tr>
<td>MSDS Number</td>
<td>92</td>
</tr>
<tr>
<td>Chemical Family</td>
<td></td>
</tr>
<tr>
<td>Chemical Formulation</td>
<td>C10H18N4O4S3</td>
</tr>
<tr>
<td>EPA Registration No.</td>
<td>264-379</td>
</tr>
<tr>
<td>Canadian Registrat. No.</td>
<td></td>
</tr>
</tbody>
</table>

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For Product Use Information: (866)-992-2937 Monday through Friday(CRLF) 8:00AM-4:30PM(CRLF) For Medical Emergency contact DART: (800) 334-7577 24 Hours/Day(CRLF)
For Transportation Emergency CHEMTREC: (800) 424-9300 24 Hours/Day

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS No.</th>
<th>Concentration % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>THIODICARB</td>
<td>59669-26-0</td>
<td>35.8000</td>
</tr>
<tr>
<td>1,2-Propylene glycol</td>
<td>57-55-6</td>
<td>3.0000</td>
</tr>
<tr>
<td>Other ingredients (Trade secret)</td>
<td>61.2000</td>
<td></td>
</tr>
</tbody>
</table>
Material Safety Data Sheet

LARVIN® BRAND 3.2 THIODICARB INSECTICIDE/OVICIDE

MSDS Number: 000000000092
MSDS Version 4.1

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview

Warning! May be fatal if swallowed. May be harmful if inhaled. May be harmful if absorbed through skin. May cause eye irritation. May cause mild skin sensitization.

Physical State

liquid

Odor

sulfur-like odor

Appearance

cream colored

Immediate Effects

Eye

Causes redness, irritation, tearing.

Skin

Harmful if absorbed through skin. May produce symptoms similar to those from ingestion.

Ingestion

May be fatal if swallowed. This product causes reversible cholinesterase inhibition. Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms. May lead to rapid onset of nausea, vomiting, diarrhea, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis, respiratory depression, and convulsions.

Inhalation

Highly toxic if inhaled. May produce symptoms similar to those from ingestion.

Chronic or Delayed Long-Term

This product does not contain any ingredients designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

Medical Conditions Aggravated by Exposure

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

SECTION 4. FIRST AID MEASURES

Eye

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

Skin

In case of contact, immediately wash with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Ingestion

If victim is conscious and alert, give 2-3 glasses of water to drink and induce vomiting by touching back of throat with a finger. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent
aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

**Inhalation**

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

**Note to Physician**

All treatment should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This product contains a methyl carbamate insecticide, which is a cholinesterase inhibitor. Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible.

Specific treatment consists of parenteral atropine sulfate. Improve tissue oxygenation as much as possible before administering atropine to minimize the risk of ventricular fibrillation. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, then intramuscularly every 30 to 60 minutes as needed to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within 24 hours.

To aid in confirmation of a diagnosis, urine samples should be obtained within 24 hours of exposure and immediately frozen. Call 1-800-334-7577 before sending samples. Analysis will be arranged by Bayer.

Persons regularly exposed in manufacturing and handling this product should have a preexposure and periodic red blood cell cholinesterase level checks. Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are NOT recommended.

### SECTION 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th><strong>Flash Point</strong></th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fire and Explosion Hazards</strong></td>
<td>Not combustible.</td>
</tr>
<tr>
<td><strong>Suitable Extinguishing Media</strong></td>
<td>Use extinguishing method suitable for surrounding fire.</td>
</tr>
<tr>
<td><strong>Fire Fighting Instructions</strong></td>
<td>Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate</td>
</tr>
</tbody>
</table>
hazard area and deny entry. Evacuate residents who are downwind of fire. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal
Evacuation Procedures and Safety: Evacuate and isolate spill area.

Cleanup and Disposal of Spill: Recover material, if possible. Pump any free liquid into an appropriate closed container. Absorb with vermiculite or other inert absorbent. Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Decontaminate tools and equipment following cleanup.

Land Spill or Leaks
Containment of Spill: Dike spill using absorbent or impervious materials such as earth, sand or clay. Follow procedure under Cleanup and Disposal of Spill. Collect and contain contaminated absorbent and dike material for disposal.

Environmental and Regulatory Reporting: Prevent material from entering public sewer system or any waterway. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies. If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal.

SECTION 7. HANDLING AND STORAGE

Handling Procedures
Avoid direct or prolonged contact with skin and eyes. Do not ingest. Do not breathe vapors and mists.

Storing Procedures
Store in original container. Store unused product in a cool, ventilated, dry, locked area. Keep out of reach of children and domestic animals. Store in an area that is away from food, feedstuffs, fertilizers and seed, away from the home or home garden.

Work/Hygienic Procedures
Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.

Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

Wash exposed skin promptly to remove accidental splashes of contact with this material.
In addition, based upon the specific hazard of this product: Do not take clothing/objects contaminated by this material off the work site. Shower and change into street clothes before leaving the work site.

Min/Max Storage Temperatures

/ 50 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Where engineering controls are indicated by use conditions of a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Eye/Face Protection

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Body Protection

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard of use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Respiratory Protection

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridge/canister approved for use against pesticides.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

General Protection

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these
procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

**Exposure Limits**

| Substance                  | WEEL TWA Form of Exposure | TWA | Exposure | ACYHI TWA Form of Exposure | WEEL TWA Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | US CA OEL TWA PEL Form of Exposure | ACGIH TWA Form of Exposure |
|----------------------------|---------------------------|-----|----------|-----------------------------|---------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------|
| 1,2-Propylene glycol 57-55-6 | Total vapor and aerosol.  | 50 ppm |           | 10 mg/m3                    |                          | 3 mg/m3                             | 5 mg/m3                             | 10 mg/m3                            | 5 mg/m3                             | 5 mg/m3                             | 5 mg/m3                             | 5 mg/m3                             | 10 mg/m3                             |                          |

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance**: cream colored
- **Physical State**: liquid
- **Odor**: sulfur-like odor
- **pH**: 4 - 5 at 1 wt/wt%.
- **Vapor Pressure**: Not available
- **Vapor Density (air = 1)**: Not available
- **Specific Gravity**: 1.13 at 20 °C
Material Safety Data Sheet

LARVIN® BRAND 3.2 THIODICARB INSECTICIDE/OVICIDE

Boiling Point  100 °C at 760 mmHg
Melting/Freezing Point  -4 °C
Solubility (in water)  miscible
Molecular Weight  354.5 g/mol

Other Information  Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability  This material is stable under normal handling and storage conditions described in Section 7.
Conditions to Avoid  extreme heat
Incompatibility  rust
bases
mineral acids
brass
iron chlorides
metal salts
cupric chloride

Hazardous Products of Decomposition  Decomposition Type: thermal
carbon oxides
sulfur acetonitrile
dimethyl disulfide methomyl

Hazardous Polymerization (Conditions to avoid)  not applicable

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity  Rat: LD50: 166 mg/kg
Acute Dermal Toxicity  Rabbit: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity  Rat: LC50: 1.51 mg/l 4 h

Acute Respiratory Irritation: No test data found for product.
Skin Irritation
Rabbit: Non-irritating.

Eye Irritation
Rabbit: Slightly irritating. Irritation is transient.

Chronic Toxicity
Thiodicarb, the active ingredient, has been shown not to be teratogenic or carcinogenic in animal studies. Two of the nine in vitro mutagenicity studies for this ingredient were positive, while an in vivo mutagenicity study in rats was negative. The weight of evidence suggests that thiodicarb is not a mutagen.

Assessment Carcinogenicity
ACGIH
None
NTP
None
IARC
None
OSHA
None

SECTION 12. ECOLOGICAL INFORMATION

Ecological Information
For ecotoxicological data call the product information phone number listed in Section 1.

Environmental Fate
For chemical fate data call the product information phone number listed in Section 1.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance
Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - Yes

RCRA Classification
59669-26-0 THIODICARB

### SECTION 14. TRANSPORT INFORMATION

For Transportation Regulatory Information call the Product Information phone number in Section 1.

### SECTION 15. REGULATORY INFORMATION

#### US Federal
- **EPA Registration No.** 264-379
- **TSCA list**
  - 1,2-Propylene glycol 57-55-6
- **TSCA 12b export notification**
  - None
- **SARA Title III - section 302 - notification and information**
  - None
- **SARA Title III - section 313 - toxic chemical release reporting**
  - THIODICARB 59669-26-0 1.0%

#### US States Regulatory
- **CA Prop65**
  - This product contains a chemical known to the state of California to cause cancer.

#### US State right-to-know ingredients
- **THIODICARB** 59669-26-0 IL, NJ
- **1,2-Propylene glycol** 57-55-6 PA, RI

#### Canadian Regulations
- **Canadian Registrat. No.**
- **Canadian Domestic Substance List**
  - 1,2-Propylene glycol 57-55-6

#### Environmental
- **CERCLA**
  - THIODICARB 59669-26-0 1 lbs
- **Clean Water Section 307 Priority Pollutants**
  - None
- **Safe Drinking Water Act Maximum Contaminant Levels**
  - None

#### International Regulations
- **EU Classification**
  - None
- **European Inventory of Existing Commercial Substances (EINECS)**
  - THIODICARB 59669-26-0
SECTION 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Others</th>
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<tbody>
<tr>
<td>HMIS</td>
<td>3</td>
<td>0</td>
<td>1</td>
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<tr>
<td>NFPA</td>
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<td>0</td>
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Reason for Revisions: Company name change.

Print Date: 12/16/2002
Supersedes MSDS, which is older than: 12/16/2002

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