SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>SEVIN® BRAND XLR PLUS CARBARYL INSECTICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSDS Number</td>
<td>102000001927</td>
</tr>
<tr>
<td>EPA Registration No.</td>
<td>264-333</td>
</tr>
</tbody>
</table>

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

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-866-99BAYER (1-866-992-2937)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbaryl</td>
<td>63-25-2</td>
<td>44.10</td>
</tr>
<tr>
<td>1,2-Propanediol</td>
<td>57-55-6</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview
Caution! Harmful if swallowed, inhaled or absorbed through the skin. Harmful if gets in eyes. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing.

Physical State
liquid suspension

Odor
weak characteristic

Appearance
white to beige

Routes of Exposure
Ingestion, Inhalation, Eye contact, Skin Absorption

Immediate Effects
Eye
Do not get in eyes. May cause redness, irritation, tearing.

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

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

Inhalation

Harmful if inhaled. Do not breathe vapours or spray mist. May produce symptoms similar to those from ingestion.

Chronic or Delayed Long-Term

This product or its components may have target organ effects. This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).

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.

Potential Environmental Effect

Highly toxic to bees. Extremely toxic to aquatic and estuarine invertebrates.

SECTION 4. FIRST AID MEASURES

General

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Skin

Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Notes to Physician

Signs and Symptoms

Temporary blurred vision due to contraction of the pupils (miosis) following contact with the eyes.

- Bradycardia
- Low blood pressure
- Salivation
bronchial hypersecretion
Vomiting
Diarrhoea
sweating
muscular fasciculation
spasm
breathing difficulties
respiratory paralysis
somnolence
Coma
respiratory failure
hypothermia
Convulsions
Nausea

Hazards
This product contains a cholinesterase inhibitor carbamate.

Treatment
The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. If symptoms of carbamate poisoning are present, the administration of atropine sulfate is indicated.

ANTIDOTE: Administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. In mild cases, start treatment by giving 1-2 mg of atropine intravenously every 15 minutes until signs of atropinization appear (dry mouth, flushing and dilated pupils if pupils were originally pinpoint). In severe cases 2 to 4 mg should be injected 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.

Do not use oximes such as 2-PAM unless organophosphate intoxication is suspected. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>&gt; 100 °C / 212 °F</td>
</tr>
<tr>
<td></td>
<td>No flash point - Determination conducted up to the boiling point.</td>
</tr>
<tr>
<td>Fire and Explosion Hazards</td>
<td>In the event of fire the following can be released:</td>
</tr>
<tr>
<td></td>
<td>Carbon monoxide (CO)</td>
</tr>
<tr>
<td></td>
<td>Nitrogen oxides (NOx)</td>
</tr>
<tr>
<td>Suitable Extinguishing Media</td>
<td>Water spray, Foam, Carbon dioxide (CO2), Dry powder</td>
</tr>
</tbody>
</table>
Fire Fighting Instructions

Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods for Cleaning Up

Recover the product by pumping, suction or absorption using a dry and inert absorbent clay. Collect and transfer the product into a properly labelled and tightly closed container. When picked up, treat product as prescribed in Ch. 13. "Disposal considerations".

Additional Advice

Use personal protective equipment. Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8.

SECTION 7. HANDLING AND STORAGE

Handling Procedures

Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Storing Procedures

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Keep away from food, drink and animal feedingstuffs.

Work/Hygienic Procedures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Min/Max Storage Temperatures

Recommended maximum transport/storage temperature: 38 °C / 100 °F

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection

Cholinesterase activity of the worker should be supervised.

Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such
instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Eye/Face Protection
Tightly fitting safety goggles

Hand Protection
Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

Body Protection
Wear long-sleeved shirt and long pants and shoes plus socks. Chemical resistant headgear for overhead exposure

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

Exposure Limits

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA</th>
<th>ACGIH NIC TWA</th>
<th>NIOSH REL</th>
<th>OSHA Z1 PEL</th>
<th>OSHA Z1A TWA</th>
<th>US CA OEL TWA PEL</th>
<th>TX ESL ST ESL</th>
<th>TX ESL AN ESL WEEL TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbaryl 63-25-2</td>
<td>5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>50 ug/m³</td>
<td>5 ug/m³</td>
</tr>
<tr>
<td>1,2-Propanediol 57-55-6</td>
<td>Aerosol 10 mg/m³</td>
<td>Particulate 20 µg/m³</td>
<td>Vapor 500 ppm 1560 µg/m³</td>
<td>Particulate 2 µg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>white to beige</td>
</tr>
<tr>
<td>Physical State</td>
<td>liquid suspension</td>
</tr>
<tr>
<td>Odor</td>
<td>weak characteristic</td>
</tr>
<tr>
<td>pH</td>
<td>4.0 - 5.0 (10 %) at 20 ºC</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 1.09 g/cm³ at 20 ºC</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>-4 ºC / 25 ºF</td>
</tr>
</tbody>
</table>
**Material Safety Data Sheet**
SEVIN® BRAND XLR PLUS CARBARYL INSECTICIDE

**SECTION 10. STABILITY AND REACTIVITY**

**Water solubility**
miscible

**Decomposition Temperature**
175 - 190 °C
Exothermic decomposition.

**Viscosity**
500 - 700 mPa.s at 25 °C

**SECTION 11. TOXICOLOGICAL INFORMATION**

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, carbaryl.

**Acute Oral Toxicity**
- male rat: LD50: 867 mg/kg
- female rat: LD50: 575 mg/kg
- male/female combined rat: LD50: 699 mg/kg

**Acute Dermal Toxicity**
rat: LD50: > 4,000 mg/kg

**Acute Inhalation Toxicity**
- male/female combined rat: LC50: 3.8 mg/l Exposure time: 4 h
- male/female combined rat: LC50: 15.2 mg/l Exposure time: 1 h Extrapolated from the 4 hr LC50.

**Skin Irritation**
rabbit: Slight irritation.

**Eye Irritation**
rabbit: Slight irritation.

**Sensitization**
guinea pig: Non-sensitizing.

**Chronic Toxicity**
Carbaryl causes reversible cholinesterase inhibition. Changes in urinary bladder, thyroid, kidney and liver were observed in chronic studies in rats.
Assessment Carcinogenicity

Carbaryl has been shown to cause tumors in laboratory animals in lifetime feeding studies.

- **ACGIH**
  - Carbaryl 63-25-2 Group A4
- **NTP**
  - None.
- **IARC**
  - Carbaryl 63-25-2 Overall evaluation: 3
- **OSHA**
  - None.

**Reproductive & Developmental Toxicity**

- **REPRODUCTION**: Carbaryl was not a reproductive toxicant in a two-generation study in rats.
- **DEVELOPMENTAL**: Carbaryl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in both species but were considered secondary to maternal toxicity.

**Neurotoxicity**

Carbaryl caused transient neurobehavioral effects (e.g., tremors) related to cholinergic toxicity without correlating neuropathological changes in acute and subchronic neurotoxicity studies in rats. Carbaryl did not cause developmental neurotoxic effects in offspring in a one-generation developmental neurotoxicity study in rats.

**Mutagenicity**

Carbaryl poses only a slight mutagenic risk based on the overall weight of evidence in a battery of in vitro and in vivo tests.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental Precautions**

- Do not apply when weather conditions favor runoff or drift. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not allow to get into surface water, drains and ground water.

  Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.
SECTION 13. DISPOSAL CONSIDERATIONS

**General Disposal Guidance**
Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.

**Container Disposal**
Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Consult state and local regulations regarding the proper disposal of container.

**RCRA Classification**
The RCRA Classifications may be on the individual component(s) and not necessarily on the product as a whole.

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>63-25-2</td>
<td>Carbaryl</td>
</tr>
<tr>
<td>63-25-2</td>
<td>Carbaryl</td>
</tr>
</tbody>
</table>

SECTION 14. TRANSPORT INFORMATION

**TDG CLASSIFICATION:**
Not regulated for Road and Rail

**DOT CLASSIFICATION:**
**NON BULK:**
Not Regulated for Domestic Surface Transportation

**BULK:**
Environmentally Hazardous Substances, Liquid, N.O.S. (Carbaryl) // 9 // UN3082 // PG III // RQ(Carbaryl)
Carbaryl RQ is 100 lbs. It takes 227 lbs or 25 gallons of product per package to meet RQ
Carbaryl is a Marine Pollutant

**FREIGHT CLASSIFICATION:**
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15. REGULATORY INFORMATION

**EPA Registration No.**
264-333
US Federal Regulations

TSCA list

Carbaryl 63-25-2
1,2-Propanediol 57-55-6

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Carbaryl 63-25-2 1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Carbaryl 63-25-2 CA, CT, IL, MA, MN, NJ, PA, RI
1,2-Propanediol 57-55-6 MN, RI

Canadian Regulations

Canadian Domestic Substance List

1,2-Propanediol 57-55-6

Environmental

CERCLA

Carbaryl 63-25-2 100 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 2 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated Section 11: TOXICOLOGICAL INFORMATION.

Revision Date: 02/14/2008

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