



Material Safety Data Sheet
SEVIN® SL CARBARYL INSECTICIDE

MSDS Number: 102000004253
 MSDS Version 2.1
 Revision Date: 01/27/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name SEVIN® SL CARBARYL INSECTICIDE
Chemical Name Carbaryl
MSDS Number 102000004253
EPA Registration No. 432-1227

Bayer Environmental Science
 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: 1-800-331-2867

SECTION 2. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! May be harmful by inhalation, ingestion, skin adsorption. Avoid contact with skin, eyes and clothing.

Physical State liquid suspension

Odor mild

Appearance white to beige

Exposure routes Ingestion, Inhalation, Skin contact

Immediate Effects

Eye Causes redness, irritation, tearing. Avoid contact with eyes.

Skin Harmful if absorbed through skin. May produce symptoms similar to those from ingestion. Avoid contact with skin and clothing.

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. Do not take internally.

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



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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 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Carbaryl	63-25-2	43.00
1,2-Propanediol	57-55-6	5.00

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



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Diarrhoea
 sweating
 Muscular fasciculation
 spasm
 breathing difficulties
 respiratory paralysis
 Somnolence
 Coma
 respiratory failure
 hypothermia
 Convulsions
 Nausea

Hazards This product is a cholinesterase inhibitor carbamate.

Treatment Monitor: respiratory, cardiac and central nervous system. Monitor: blood picture. Monitor: red blood cell and plasma cholinesterase. ECG - monitoring (Electrocardiogram). Oxygen or artificial respiration if needed. Keep respiratory tract clear. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. The following antidote is generally accepted: atropine. Before antidote is administered, either clear symptoms of poisoning have to be present or the cholinesterase activity is inhibited to below 30% of normal. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. Contraindications: oximes (pralidoxime, obidoxime).

Do not use oximes such as 2-PAM unless organophosphate intoxication is suspected. 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. Contraindications: derivatives of morphine.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 100 °C / > 212 °F
Lower Flammability Limit	2.6 %(V)
Upper Flammability Limit	19 %(V)
Fire and Explosion Hazards	In the event of fire the following may be released: nitrogen oxides (NOx) Carbon monoxide (CO)
Suitable extinguishing media	Water spray, Foam, Carbon dioxide (CO2), Dry powder



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Fire Fighting Instructions

Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

Evacuate personnel to safe areas. 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 people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

Methods for cleaning up

Dike area to prevent runoff. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container.

Additional advice

Do not allow to enter soil, waterways or waste water canal.

Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Check also for any local site procedures.

SECTION 7. HANDLING AND STORAGE

Handling procedures

Avoid contact with skin, eyes and clothing. Use only in area provided with appropriate exhaust ventilation.

Storing Procedures

Keep out of reach of children and animals. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

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.

Wash thoroughly and put on clean clothing.

Contaminated work clothing should not be allowed out of the workplace. Wash thoroughly and put on clean clothing.



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Min/Max Storage Temperatures no data available

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. Eye wash facility and safety shower should be available.
 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 Safety glasses with side-shields

Hand protection Chemical resistant nitrile rubber gloves
 Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination outside cannot be removed.

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

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

Carbaryl	63-25-2	ACGIH	TWA	5 mg/m3
		ACGIH NIC	TWA	0.5 mg/m3
		NIOSH	REL	5 mg/m3
		OSHA Z1	PEL	5 mg/m3
		OSHA Z1A	TWA	5 mg/m3
		US CA OEL	TWA PEL	5 mg/m3
		TX ESL	ST ESL	50 ug/m3
		TX ESL	AN ESL	5 ug/m3
		OES BCS*	TWA	5 mg/m3
		ACGIH	TWA	0.5 mg/m3
		Ethanol	64-17-5	ACGIH
NIOSH	REL			1,000 ppm
OSHA Z1	PEL			1,000 ppm
OSHA Z1A	TWA			1,000 ppm
US CA OEL	TWA PEL			1,000 ppm
TX ESL	ST ESL			18800 ug/m3
TX ESL	AN ESL			1880 ug/m3
ACGIH	STEL			1,000 ppm
OES BCS*	TWA			500 ppm

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to beige
Physical State	liquid suspension
Odor	mild
pH	4.0 - 5.0 (100 %)
Vapor Pressure	23.7 hPa / 17.8 mm Hg at 20 °C
Vapor Density (Air = 1)	0.62
Specific Gravity	1.1 at 20 °C
Density	1.10 g/cm ³ at 20 °C
Boiling Point	98 °C / 208 °F
Melting / Freezing Point	-3 °C / 27 °F
Water solubility	miscible
Decomposition temperature	175 - 190 °C Exothermic decomposition.

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Heat, flames and sparks.
Incompatibility	Strong acids Bases
Hazardous Decomposition Products	Thermal decomposition nitrogen oxides (NO _x) Carbon oxides Methyl isocyanate (trace; no adverse effects expected)
Hazardous reactions	No dangerous reaction known under conditions of normal use.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have been bridged from a similar formulation containing a similar percentage of the



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active ingredient, carbaryl. The non-acute information pertains to technical-grade carbaryl.

Acute oral toxicity rat: LD50: 699 mg/kg

Acute dermal toxicity male/female combined rabbit: LD50: > 4,000 mg/kg

Acute inhalation toxicity male/female combined rat: LC50: >= 3.84 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

Sensitisation guinea pig: Non-sensitizing.

Chronic toxicity Reversible cholinesterase inhibition occurred in chronic toxicity studies in rats and dogs. The principal organs affected in rats from long-term exposure to high-doses of carbaryl included the urinary bladder, thyroid, kidneys and liver.

Assessment Carcinogenicity

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

ACGIH

Carbaryl	63-25-2	Group A4
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NTP

None.

IARC

Carbaryl	63-25-2	Overall evaluation: 3
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OSHA

None.

Reproductive toxicity REPRODUCTION: Carbaryl was not a reproductive toxicant in a two-generation study in rats.

DEVELOPMENTAL TOXICITY: 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 A battery of in vitro and in vivo mutagenicity studies have been conducted on carbaryl. Collectively, these studies indicate that carbaryl poses only a slight



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mutagenic risk.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish Rainbow trout (*Oncorhynchus mykiss*)
LC50: 1.4 mg/l
Exposure time: 96 h

Acute Toxicity to Aquatic Invertebrates Water flea (*Daphnia magna*)
EC50: 0.00067 mg/l
Exposure time: 48 h

Toxicity to other organisms *Anas platyrhynchos* (Mallard duck)
LC50: > 5,000 mg/kg
Exposure time: 8 d
The value mentioned relates to the active ingredient.

Colinus virginianus (Bobwhite quail)
LC50: > 5,000 mg/kg
Exposure time: 8 d
The value mentioned relates to the active ingredient.

Environmental precautions

Do not apply when weather conditions favor runoff or drift. 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 contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

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

Do not allow to get into surface water, drains and ground water.



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Follow container label instructions for disposal of wastes generated during use in compliance with the product label. Do not contaminate water, food, or feed by disposal. Open dumping is prohibited. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal Triple rinse containers. If burned, stay out of smoke. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.

SECTION 14. TRANSPORT INFORMATION

DOT TRANSPORTATION:
 Not regulated for Domestic Surface Transportation*

*When package contains 100 LBS of Carbaryl, or =227 LBS, or 25 Gal. the RQ is met. It is regulated as: RQ, Environmentally Hazardous Substances, Liquid, N.O.S. (Carbaryl) // 9 // UN3082 // PG III

IMDG CLASSIFICATION:
 RQ, Environmentally Hazardous Substances, Liquid, N.O.S. (Carbaryl) // 9 // UN3082 // PG III // Marine Pollutant

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

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1227

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%
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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



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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
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Environmental

CERCLA

Carbaryl	63-25-2	100 lbs
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Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Carbaryl	63-25-2
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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

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

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

Reason to Revise: Updated for general editorial purposes.

Revision Date: 01/27/2010

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