

Safety Data Sheet

SOVRAN FUNGICIDE

Revision date : 12/05/2012
Version: 1.0

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1. Product and Company Identification

Company

Cheminova Inc.
P.O. Box 110566
One Park Drive, Suite 150
Research Triangle Park, NC 27709
USA

24 Hour Emergency Response Information

1-866-303-6950 (Medical Emergencies)
1-800-424-9300 (24 Hr. Chemtrec Number)

Product Name:	Sovran Fungicide
EPA Reg. No:	7969-154-67760
Synonyms:	kresoxim methyl methyl (E)-methoxyimino[2-(o-tolyloxymethyl)phenyl]acetate
Molecular formula:	C(18) H(19) N
O(4) Chemical family:	strobilurine
EPA Reg. No:	7969-154-67760

2. Hazards Identification

Emergency overview

CAUTION:
KEEP OUT OF REACH OF CHILDREN.
HARMFUL IF INHALED.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
Causes eye irritation.
Do not get in eyes, on skin, or on clothing.
Avoid inhalation of mists/vapors.

See Product Label for additional precautionary statements.

State of matter: solid
Color: dark brown
Odor: sulfur-like

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Relatively nontoxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Irritation / corrosion:

May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

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Potential environmental effects

Aquatic toxicity:

Very toxic (acute effect) to aquatic organisms.

Terrestrial toxicity:

Acutely harmful to terrestrial organisms.

3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
143390-89-0	50.0 %	kresoxim-methyl
	50.0 %	Proprietary ingredients

4. First-Aid Measures

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

If swallowed:

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor.

Note to physician

Antidote: No known specific antidote.
Treatment: Treat symptomatically.

5. Fire-Fighting Measures

Flash point: not applicable
Autoignition: 340 °C

Suitable extinguishing media:

foam, dry extinguishing media, carbon dioxide, water spray

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, hydrocarbons,
The substances/groups of substances mentioned can be released if the product is involved in a fire.

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If product is heated above decomposition temperature, toxic vapours will be released.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions:

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Cleanup:

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Handling

General advice:

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed.

Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapors. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge.

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Electrostatic discharge may cause ignition.

Storage

General advice:

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Storage incompatibility:

General advice: Segregate from foods and animal feeds.
Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Temperature tolerance

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls and Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapors. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment

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should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	granules
Odor:	sulfur-like,
mild Color:	dark brown
pH value:	5.8
Melting point:	not applicable, The substance / product decomposes therefore not determined.
Vapor pressure:	negligible
Bulk density:	approx. 600 kg/m ³ (20 °C)
Partitioning coefficient n- octanol/water (log Pow):	not applicable
Solubility in water:	dispersible
Molar mass:	313.8 g/mol

10. Stability and Reactivity

Minimum ignition energy:

> 160 - < 320 mJ

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage. This product may form an explosive mixture if: 1. the dust is suspended in the atmosphere as a dust cloud AND 2. the concentration of the dust is above the lower explosion limit (LEL) AND 3. the limiting oxygen concentration (LOC) is exceeded.

Substances to avoid:

strong oxidizing agents

Hazardous reactions:

The product is chemically stable.

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

Possible thermal decomposition products:
carbon monoxide, carbon dioxide, nitrogen monoxide, nitrogen dioxide, hydrocarbons
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapors may be released.

Corrosion to metals:

Corrosive effects to metal are not anticipated. Not corrosive to: mild steel

Oxidizing properties:

Not fire-propagating (Directive 92/69/EEC, A.17)
Not an oxidizer.

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11. Toxicological information

Acute toxicity

Oral:

Type of value: LD50
Species: rat (male/female)
Value: > 5,000 mg/kg (Directive 84/449/EEC, B.1)

Inhalation:

Type of value: LC50
Species: rat
Value: > 5.7 mg/l (OECD Guideline 403) Exposition time: 4 h
Tested as dust aerosol.

Dermal:

Type of value: LD50
Species: rat (male/female)
Value: > 2,000 mg/kg (OECD Guideline 402)

Irritation / corrosion

Skin:

Species: rabbit
Result: non-irritant
Method: Directive 84/449/EEC, B.4

Eye:

Species: rabbit
Result: non-irritant
Method: Directive 84/449/EEC, B.5

Sensitization:

Buehler test
Species: guinea pig
Result: Skin sensitizing effects were not observed in animal studies. Method: Directive 84/449/EEC, B.6

Genetic toxicity

Information on: kresoxim-methyl
No mutagenic effect was found in various tests with microorganisms and mammals.

Carcinogenicity

Information on: kresoxim-methyl
Very high concentrations in the range of the maximum tolerated dose (MTD) have caused liver tumors in rats after chronic exposure. These concentrations will not be achieved under practical conditions.
Limited evidence of a carcinogenic effect.

Reproductive toxicity

Information on: kresoxim-methyl
The results of animal studies gave no indication of a fertility impairing effect.

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Development:

Information on: kresoxim-methyl
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

12. Ecological Information

Fish

Information on: kresoxim-methyl
Acute:
Oncorhynchus mykiss/LC50 (96 h): > 0.68 - < 1.0 mg/l

Aquatic invertebrates

Information on: kresoxim-methyl
Acute:
Daphnia magna/EC50 (48 h): 0.186 mg/l

Aquatic plants

Information on: kresoxim-methyl
Toxicity to aquatic plants:
green algae/EC50 (72 h): 0.063 mg/l

Degradability / Persistence Biological / Abiological Degradation

Evaluation: Not readily biodegradable (by OECD criteria).
Poorly biodegradable.

Other adverse effects:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

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14. Transport Information

US DOT 49 CFR information: This material is not regulated for transport.

INTERNATIONAL:

IMDG/IMO (vessel): UN3077, Environmentally hazardous substance, solid, n.o.s.
(kresoxim methyl), 9, PGIII, Marine Pollutant

IATA/ICAO (air): UN3077, Environmentally hazardous substance, solid, n.o.s.
(kresoxim methyl), 9, PGIII, Marine Pollutant

15. Regulatory Information

Regulations under FIFRA: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulating facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

EPA/CERCLA Reportable Quantity (RQ): Not applicable

SARA TITLE III:

Sec. 302, Extremely Hazardous Substance Notification: This material is not known to contain any Extremely Hazardous Substances.

Sec. 311/312, Hazard Categories: Immediate (acute) health hazard

Sec. 313, Toxic Chemicals Notification: Not applicable

California Proposition 65: Not applicable

Toxic substances control act (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

16. Other Information

HMIS Rating: 1 Health; 0 Flammability; 0 Reactivity

NFPA Rating: 1 Health; 0 Flammability; 0 Reactivity

0-minimal 1-slight 2-moderate 3-severe 4-extreme

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