Product Safety Assessment

**Meptyldinocap**


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### Names
- CAS No. 131-72-6
- (2,4-Dinitro-6-(1-methylheptyl)phenyl crotonate
- (E)-2-Butenoic acid,2-(1-methylheptyl)-4,6-dinitrophenyl ester
- (rs)-2-(1-Methylheptyl)-4,6-dinitrophenyl crotonate
- 2-(1-methylheptyl)-4,6-dinitrophenyl (2E)-2-butenoate
- Meptyldinocap
- Dinocap II technical fungicide
- KARATHANE® Gold fungicide
- KARATHANE® Star fungicide
- KARATHANE® 3D fungicide
- KINDRED® fungicide MAPP 13891

Much of the information in this document relates to the registration and sale of meptyldinocap in a selected few countries. For details applicable to the country of interest, consult the relevant [Product Label](http://www.dow.com/productsafety/finder/), [Safety Data Sheet](http://www.dow.com/productsafety/finder/) or [Contact Us](http://www.dow.com/productsafety/finder/).

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#### Product Overview

- Meptyldinocap is the common name for a contact fungicide registered to Dow AgroSciences LLC. Its mode of action is to interfere with fungal respiration by acting as an uncoupler of oxidative phosphorylation. For further details, see [Product Description](http://www.dow.com/productsafety/finder/).
- Meptyldinocap is a viscous, yellow to brown liquid with a sweet odor that is typically formulated as an emulsifiable concentrate. For further details, see [Product Description](http://www.dow.com/productsafety/finder/).
- Uses of meptyldinocap include eradication, curative, and preventive treatment of powdery mildew on grapes, cucurbits crops, and strawberries. For further details, see the relevant [Product Label](http://www.dow.com/productsafety/finder/) and [Product Uses](http://www.dow.com/productsafety/finder/).
- Those working in manufacturing, formulation, distribution operations or during applications of the product in the field could be exposed. Workers can minimize the potential for exposure by carefully following workplace procedures and label directions and wearing the proper protective equipment. Exposure resulting of product treated with meptyldinocap has been estimated at an acceptable level for consumers. For further details, see the relevant [Product Label](http://www.dow.com/productsafety/finder/) and [Exposure Potential](http://www.dow.com/productsafety/finder/).
- Eye contact may cause slight to moderate irritation. Prolonged skin contact may cause irritation with discomfort and local redness. Meptyldinocap may be a skin sensitizer and allergic reactions are possible.

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Meptyldinocap has low toxicity if swallowed. Meptyldinocap showed no chronic oncogenic, mutagenic, teratogenic, carcinogenic, genotoxic or reproductive hazards. For further details, see Health Information or the Safety Data Sheet.

- Because it binds to soil and sediment, meptyldinocap is not expected to leach into groundwater. Meptyldinocap is readily degraded in soil through hydrolysis and microbial degradation and will not persist in the environment. Meptyldinocap is moderately toxic to bees and earthworms, highly toxic to fish and invertebrates, moderately toxic to algae, and nontoxic to birds. For further details, see the relevant Product Label and Environmental Information.

- Meptyldinocap formulations are stable under normal use and storage conditions. Avoid prolonged heating above 32°C. Avoid contact with acids, bases, amines, iron, and halogens. Under fire conditions, oxides of nitrogen, hydrogen chloride, and hydrogen fluoride may be produced. Consult the Product Label for specific use and storage information. For further details, see Physical Hazard Information.

Manufacture of Product

- Manufacture – Meptyldinocap is produced using a complex and proprietary series of reaction and purification steps. The chemical structure of meptyldinocap is shown below:

![Chemical Structure of Meptyldinocap]

Product Description

Meptyldinocap is the common name for 2,4-dinitro-6-(1-methylheptyl)phenyl crotonate, a contact fungicide registered to Dow AgroSciences LLC. It is one of six isomers found in dinocap fungicide. Its mode of action is to interfere with fungal respiration by acting as an uncoupler of oxidative phosphorylation. Meptyldinocap is a viscous, yellow to brown liquid that is usually formulated as an emulsifiable concentrate. Formulated meptyldinocap products contain 30–40% active ingredient, with the balance solvents and stabilizers. Meptyldinocap formulations are marketed under the tradenames KINDRED® fungicide, KARATHANE® Gold Fungicide, and KARATHANE® Star fungicide.

Product Uses and Regulatory Information

Meptyldinocap provides eradication, curative, and preventive control of powdery mildews on grapes, strawberries, and cucurbit crops. Registration has been approved or is pending in Chile, India, Italy, and the United Kingdom, as well as many European and African countries. Although not yet registered for use in the United States, Dow AgroSciences supports tolerances for meptyldinocap residues in/on grapes to permit legal importation of these commodities into the U.S. Meptyldinocap products include:

- KINDRED® fungicide – for table and wine grapes and protected strawberries
- KARATHANE® Gold fungicide – control of powdery mildew on grapes

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• KARATHANE® 3D fungicide – control of powdery mildew on grapes, melons, and strawberries
• KARATHANE® Star fungicide – control of powdery mildew and on grapes for table or wine, zucchini, cucumbers, watermelons, and strawberries in fields or greenhouses

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of products containing meptyldinocap. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Product Label, Safety Data Sheet, or Contact Us.

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Exposure Potential

Meptyldinocap is used in the production of commercial and residential fungicides. Based on the uses for meptyldinocap, the public could potentially be exposed through:

• **Workplace exposure** – Exposure could occur in facilities that manufacture or formulate meptyldinocap. Those working with meptyldinocap in manufacturing operations could be exposed during exposure during maintenance, sampling, testing, or other procedures. Each facility should have a thorough training program for employees and appropriate work processes and safety equipment in place to limit exposure. Agricultural workers, greens keepers, and others using this product could be exposed while applying this product. Applicators are expected to follow safety precautions, including wearing personal protective equipment that is appropriate to the application method. See Health Information and Product Label.

• **Consumer exposure to products containing meptyldinocap** – Consumers could be exposed to meptyldinocap through residues in commodities treated with meptyldinocap or, when using fungicide products containing it or, by exposure following applications in fields, gardens, or other grassy areas. The U.S. Environmental Protection Agency (EPA) has not required a risk assessment analyses on meptyldinocap to determine public safety with respect to combined dietary and nondietary exposures because it is not manufactured or used in the United States. Local authorities or a Dow AgroSciences LLC representative should be contacted for more information on authorized use patterns in specific regions. Always read and follow label instructions. See Health Information and Product Label.

• **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, ditches, sewers, waterways, or groundwater. Absorb small spills with a dry material such as sand, Zorball, or dirt. Wash thoroughly after handling. This description provides a general overview; please consult the relevant Safety Data Sheet or Product Label for more information about protective equipment and procedures. See Environmental, Health, and Physical Hazard Information.

• **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, dike the area to keep the material contained and out of waterways. Personnel engaged in clean up of spills must wear appropriate protective equipment. Consult the relevant Safety Data Sheet or Product Label for more detailed information about protective equipment and procedures. See Environmental, Health, and Physical Hazard Information.

• **In case of fire** – Consult the Product Label and Safety Data Sheet for specific firefighting measures. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Use foam, carbon-dioxide, or dry-chemical extinguishers to fight the fire. A foam system is preferred because uncontrolled water can spread potential contamination. Toxic and irritating gases and fumes can be formed in a fire. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

• **Emergency response information** – In the case of an emergency such as poisoning, product spillage, or fire associated with a Dow AgroSciences product please use the phone

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number listed on the Safety Data Sheet for the appropriate country. In some countries, the Emergency Response number is also provided on the artwork of the commercial package. In Europe, Middle East & Africa countries call: 31-115-694-982 (Netherlands).

**Health Information**

**Laboratory testing** – Meptyldinocap has been evaluated by comprehensive regulatory schemes used to register products in the EU and in geographies where the product is used. These schemes require laboratory testing for potential short-term (acute) and long-term (chronic) health effects. These tests help scientists determine how chemicals might affect humans, domestic animals, or wildlife in cases of overexposure. Pesticide products used according to label directions are unlikely to cause toxic effects. None of the effects described in this section should occur in humans during the normal handling and use of meptyldinocap products.

Health information for products containing meptyldinocap is summarized on the relevant Safety Data Sheets. It is important to note that health risks associated with individual products may vary based on their formulation or intended use. These materials may contain solvents, minor components, or additives that have additional health risks. The Safety Data Sheet is the preferred source for specific health information. An overview of health information for technical meptyldinocap appears below.

**Eye contact** – Eye contact may cause slight to moderate irritation.

**Skin contact** – Prolonged or repeated skin contact may cause irritation. Prolonged skin contact is not likely to result in absorption of harmful amounts. Skin contact may result in sensitization or an allergic skin reaction in susceptible individuals.

**Inhalation** – No adverse effects are anticipated by inhalation.

**Ingestion** – This material has low toxicity if swallowed. Swallowing small amounts incidental to normal handling operations is not likely to cause injury. However, swallowing larger amounts may cause injury.

**Cancer and birth defect information** – Meptyldinocap showed no chronic oncogenic, mutagenic, teratogenic, carcinogenic, genotoxic or reproductive hazards.

For more information, see the relevant Product Label or Safety Data Sheet.
Physical Hazard Information

Meptyldinocap is stable under normal use and storage conditions. Avoid prolonged heating above 32°C. Avoid contact with acids, bases, amines, iron, and halogens. Under fire conditions oxides of nitrogen, hydrogen chloride, and hydrogen fluoride may be produced. Consult the Product Label for specific use and storage information.

For more information, see the relevant Product Label or Safety Data Sheet.

Additional Information

- Safety Data Sheets and Product Labels (www.dowagro.com/products/label/index.htm)
- Contact Us (www.dowagro.com/company/contact/index.htm)
- KARATHANE® 3D Fungicide Specimen Label, Dow AgroSciences LLC, Label code: P0028670102 (www.dowagro.com/products/label/index.htm)
- KINDRED® Fungicide Specimen Label, Dow AgroSciences LLC, Label code: P0030620102 (www.dowagro.com/products/label/index.htm)
- An Introduction to Meptyldinocap, Technical Bulletin, Dow AgroSciences LLC

For more business information about meptyldinocap, visit the Dow AgroSciences LLC website at www.dowagro.com/.

References


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