Product Safety Assessment

Propyzamide


Select a Topic:
- Names
- Product Overview
- Manufacture of Product
- Product Description
- Product Uses & Regulatory Information
- Exposure Potential
- Health Information
- Environmental Information
- Physical Hazard Information
- Additional Information
- References

Names
- CAS No. 23950-58-5
- 3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
- Pronamide
- Propyzamide
- KERB® herbicide
- KERP 500F herbicide
- KERB 50-W herbicide
- KERP SC herbicide
- KERP 50WP specialty herbicide
- KERP FLO herbicide
- KERP 50WSP herbicide
- MENACE® 80EDF herbicide

Much of the information in this document relates to the registration and sale of propyzamide products in the United States of America. For details applicable to other geographies, consult the relevant Product Label, Safety Data Sheet, or Contact Us.

Back to top

Product Overview

- Propyzamide (also called pronamide) is the common name for the active ingredient in several herbicide formulations marketed by Dow AgroSciences LLC, a wholly owned subsidiary of The Dow Chemical Company. Its mode of action is to prevent cell division (mitosis) in certain grasses and broadleaf weeds. For further details, see Product Description.
- Propyzamide is an odorless off-white solid that is formulated into wettable powders, suspension concentrates, and water-dispersible granules. For further details, see Product Description.
- Propyzamide provides selective pre- and post-emergent control of annual grasses and broadleaf weeds in a wide variety of crops. Crops treated with propyzamide in the US may include alfalfa, apples, artichoke, blackberry, boysenberry, blueberry, cherry, clover, endive, escarole, grape, head lettuce, nectarine, peach, pear, plum, prune, radicchio greens, raspberry, rhubarb, woody ornamentals, nursery stock of ornamentals, and Christmas tree farms, and many others. It is also used on golf courses, industrial and office building sites, and stadium fields or professional athletic fields. Propyzamide is not registered for use on residential lawns. In Europe, uses include oilseed rape (winter), field bean (winter), apple, blackberry and other bush berries, pear, plum, rhubarb, strawberry, various seed crops (red clover, white clover, sugar beet, fodder rape, kale, turnip), lettuce, and forests. For further details, see the relevant Product Label and Product Uses.

© Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow
- Those working in manufacturing, formulation, distribution operations, or during application 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 from crops treated with propyzamide has been estimated to be at an acceptable level for consumers. For further details, see the relevant Product Label and Exposure Potential.
- Eye contact may cause moderate irritation. Product dust may irritate the eyes. Prolonged skin contact may cause slight irritation with local redness. Inhaled product dust may cause irritation of the nose, throat, and lungs. Propyzamide has very low toxicity if swallowed. Propyzamide has caused tumors in laboratory animals. For further details, see Health Information or the Safety Data Sheet.
- Propyzamide is highly toxic to aquatic organisms on an acute basis, but practically nontoxic to mammals, birds, and bees. It is not expected to accumulate in the food chain (low bioconcentration potential). It has moderate persistence in soil. Propyzamide would be removed by common wastewater-treatment processes. For further details, see Environmental Information or the Safety Data Sheet.
- Propyzamide formulations are stable under recommended use and storage conditions. Consult the Product Label for specific use and storage information. For further details, see Physical Hazard Information.

Manufacture of Product

Propyzamide is produced using a complex and proprietary series of reaction and purification steps. The chemical structure of propyzamide is shown below.

Product Description

Propyzamide is the common name for 3,5-dichloro-N-(1,1-dimethyl-2-propynyl) benzamide, a soil-active, systemic herbicide manufactured by Dow AgroSciences LLC. Its mode of action is to interfere with cell division in the root systems of a select group of annual grasses and broadleaf weeds. Propyzamide is an off-white, odorless solid that is formulated into wettable powders, suspension concentrates, and water-dispersible granules. Formulated propyzamide products contain from 35 to 51% active ingredient, with the balance solvents, stabilizers, and inert ingredients depending on the formulation. Propyzamide formulations are marketed under the trade names KERB® herbicide, KERB® FLO herbicide, and MENACE® 80EDF herbicide.

Product Uses & Regulatory Information

Propyzamide is used to provide pre- and post-emergent control of a wide range of broadleaf weeds and grasses. Propyzamide is a restricted-use pesticide in the United States; it can only be applied by certified applicators or persons under their direct supervision. It is registered by the U.S. Environmental Protection Agency (EPA) for the following applications:

- Crops – stone fruits (apricot, cherry, nectarine, peach, plum, prune), pome fruits (apple, pear), grapes, artichokes (globe), berries (blackberry, blueberry, boysenberry, red raspberry, black
Propyzamide is used in the formulation of commercial herbicides. Based on the uses for this ingredient, the public could potentially be exposed through:

- **Workplace exposure** – Exposure can occur in a facility that manufactures propyzamide, in facilities that formulate this material, or during field application. It is produced, distributed, and stored in closed systems. Those working with this product in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit exposure. Field applicators should carefully read and follow application instructions on the product label. See Health Information and Product Label.

- **Consumer exposure to products containing propyzamide** – Propyzamide is a restricted-use herbicide in the United States: consumers cannot purchase or use this product. The public could be exposed to propyzamide following applications at golf courses, parks, etc. Consumers could be exposed to traces of propyzamide by consuming residues in food or drinking water. The U.S. Environmental Protection Agency (EPA) has performed dietary risk assessment and has determined that propyzamide is of relatively low acute toxicity, but has been demonstrated to cause liver tumors in male mice and is currently classified as a B2 ‘probable’ human carcinogen. Chronic (long-term) dietary exposure to propyzamide is at a very low level and EPA determined that chronic dietary (food + water) risk estimates were not of concern⁴⁰. Propyzamide is currently undergoing reregistration review by the EPA as part of their normal schedule for reauthorizing the registration of pesticide active ingredients. See Health Information.

- **Environmental releases** – This description provides a general overview. Please consult the relevant Safety Data Sheet or Product Label for more information about protective equipment and procedures. In the event of a spill, contain the material to prevent contamination of soil, ditches, sewers, waterways, or groundwater. Sweep up small spills and place in a suitable container for disposal. Keep dusts to a minimum. For spills of liquid product, soak up with sand or other noncombustible absorbent material and place in containers for disposal. Propyzamide biodegrades at a moderate rate in soil and will not persist in the environment. It shows a low tendency to bioconcentrate (accumulate in the food chain). Propyzamide is very toxic to aquatic organisms, but nontoxic to mammals, birds, and bees. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, barricade the area. Keep the material contained and out of waterways.

Propyzamide products are registered for use in Australia, Canada, Europe, the United States and several other countries.

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of propyzamide. 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.
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** – Isolate the fire and deny entry. Eliminate all sources of ignition immediately. Use a water fog or fine spray, carbon-dioxide, or dry-chemical extinguishers, or foam to fight the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Combustion generates toxic fumes of hydrogen chloride, nitrogen oxides, carbon oxides, and other products of combustion. Pesticide particulates can become airborne; dusts at sufficient concentrations can form explosive mixtures with air. Stay upwind of the fire. If possible contain the fire water to minimize the potential for environmental damage. Follow emergency procedures carefully. Consult the [Product Label](#) and [Safety Data Sheet](#) for specific firefighting measures. 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 in the United States call 800-992-5994. In Europe, Middle East and Africa countries call 31-115-694-982 (Netherlands). For more information, see [www.dowagro.com/company/contact/index.htm](http://www.dowagro.com/company/contact/index.htm). For emergencies in countries outside the U.S., Europe, Middle East or Africa use the phone 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.

**Health Information**

**Laboratory Testing** – Propyzamide has been comprehensively evaluated under regulatory frameworks used for registration and approval of pesticide products in Australia, Canada, Europe, the United States and several and other countries. These legal frameworks require laboratory testing for potential acute, short-term, and long-term health effects. These tests help scientists and regulators determine how chemicals might affect humans, domestic animals, or wildlife in cases of exposure. Pesticide products used according to label directions are unlikely to cause toxic effects. The amount of pesticide that people and pets may be exposed to is very low compared to that used in laboratory testing.

**Eye contact** – Contact with formulated propyzamide products may cause moderate eye injury. Corneal injury is unlikely. Product dust may cause irritation.

**Skin contact** – Brief contact is essentially nonirritating. Prolonged contact with propyzamide formulated products may cause slight irritation with local redness. Prolonged contact did not result in absorption of harmful amounts. These products did not cause allergic skin reactions in animal testing.

**Inhalation** – No adverse effects are anticipated by this route of exposure incidental to proper handling. Inhaling product dust may irritate the nose, throat, and lungs.

**Ingestion** – Propyzamide formulated products have very low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts.

**Cancer and birth defect information** – Propyzamide has caused liver tumors in male mice and is currently classified as a B2 “probable” human carcinogen. In the European Community (EC), propyzamide is classified as a category 3 carcinogen. Powder formulations contain crystalline silica, which has been shown to cause cancer in laboratory animals and humans as respirable particle fractions. Propyzamide did not cause birth defects in laboratory animals.

For more information, see the relevant [Product Label](#) or [Safety Data Sheet](#).
Environmental Information\textsuperscript{24,25}

Propyzamide biodegrades at a moderate rate in soil with half-lives of 18 to 53 days under field conditions. Propyzamide does not accumulate in the food chain (low bioconcentration potential). Propyzamide is soluble in water (15 mg/L at 25°C) and has relatively low vapor pressure (8.5 x 10^{-5} torr at 25°C) and therefore has low volatilization potential. Propyzamide is moderately to slightly mobile in soil and has a limited potential to move through soil to contaminate ground or surface water. Propyzamide will be more mobile in soils with low organic matter and clay content.

Propyzamide is highly toxic to aquatic organisms, but nontoxic to mammals, birds, and honeybees.

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

Back to top

Physical Hazard Information\textsuperscript{26,27}

Propyzamide herbicide formulations are stable at recommended storage and use temperatures. Consult the Product Label for specific use and storage information.

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

Back to top

Additional Information

- Safety Data Sheets and Product Labels (www.dowagro.com/products/label/index.htm)
- Contact Us (www.dowagro.com/company/contact/index.htm)
- KERB 50W Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: D02-855-004 (http://www.dowagro.com/uk/products/prod/kerb50w.htm)
- KERB FLO Environmental Information Sheet, MAPP Number 13716, Dow AgroSciences LLC, EIS Version 3, February 18, 2010 (http://msdssearch.dow.com/PublishedLiteratureDAS/dh_040b/0901b8038040bc83.pdf?filepath=uk/pdfs/noreg/011-01413.pdf&fromPage=GetDoc)

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

Back to top
References

2 KERB® FLO Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: P002596860, pages 1–2 and 4–9.
3 KERB 50W Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: D02-855-004, pages 1 and 5–11.
7 KERB 50W Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: D02-855-004, page 3.
13 KERB 50W Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: D02-855-004, pages 1 and 2.
15 KERB FLO – an agronomist’s guide to effective management of resistant grassweeds, Dow AgroSciences LLC, page 4.
21 KERB 50W Herbicide Specimen Label, Dow AgroSciences LLC, Label Code: D02-855-004, page 3.

Back to top
NOTICES:

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers. Always read the product information before use and follow the label/use instructions.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, www.dow.com/homepage/term.asp.

Back to top