



Product Safety Assessment

Acetochlor

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Names

- CAS No. 034256-82-1
- Acetochlor
- Acetochlor, Technical
- 2-chloro-*N*-(ethoxymethyl)-*N*-(2-ethyl-6-methylphenyl)acetamide (CAS)
- 2-chloro-*N*-ethoxymethyl-6'-ethylacet-*o*-toluidide (IUPAC)
- Keystone™ herbicide
- Surpass™ herbicide
- Trophee™ herbicide
- Trophy™ herbicide
- FulTime™ herbicide
- TopNotch™ herbicide

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Product Overview

- Acetochlor is a light to dark amber, odorless liquid with the consistency of syrup. It is slightly soluble in water and has low volatility (doesn't easily evaporate).¹ See [Product Description](#).
- Acetochlor is the active ingredient in a series of herbicides sold by multiple companies around the globe. Some brand names for acetochlor products formulated by Dow AgroSciences, a subsidiary of The Dow Chemical Company ("Dow"), include Keystone™ herbicide, Surpass™ herbicide, FulTime™ herbicide, TopNotch™ herbicide, Trophee™ herbicide and Trophy™ herbicide. These products are used by farmers to control weeds in corn in all major corn growing areas around the globe. Acetochlor herbicides can be applied to the soil from 30 days prior to planting until the corn is 11 inches tall.² In addition, acetochlor is also registered in some countries outside the U.S. for control of weeds in sunflower, soybeans, sugarcane, and some other minor crops. See [Product Uses](#).
- Occupational exposure to acetochlor could occur in manufacturing or formulation operations during maintenance, sampling, testing, or other procedures. Acetochlor is a commercial-grade herbicide that is registered only for use by farmers in their crop production.³ Agricultural workers could be exposed to acetochlor during field application. Workers using acetochlor must wear proper protective equipment, and follow label instructions carefully. Use of acetochlor is regulated by the United States Environmental Protection Agency (EPA) in the U.S., plus its stewardship is monitored by the [Acetochlor Registration Partnership \(ARP\)](#) in the U.S. Respective regulatory agencies regulate its registration and use in other countries around the globe. See [Exposure Potential](#).
- Eye contact with acetochlor may cause slight irritation. Brief skin contact may cause burns. Symptoms may include pain, severe local redness, and tissue damage. Acetochlor is unlikely to be absorbed through the skin in harmful amounts. Prolonged or frequent contact may

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cause allergic reactions. Acetochlor has caused cancer in animal studies. Inhalation of acetochlor at room temperature is unlikely due to its low volatility.⁴ See [Health Information](#).

- Acetochlor is stable under normal storage and use conditions. If acetochlor is involved in a fire, carbon monoxide may be formed.⁵ See [Physical Hazard Information](#).

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Manufacture of Product

Dow AgroSciences produces acetochlor through contract agreements, for sale around the globe. In the United States, an estimated 32.3 million pounds (14,600 metric tons) of acetochlor is applied to field corn annually.⁶

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Product Description⁷

Acetochlor is the common name for the active ingredient in a series of commercial-grade herbicides formulated and sold by Dow AgroSciences, a subsidiary of Dow, plus other companies around the globe. Acetochlor is a light to dark amber, odorless liquid with the consistency of syrup. The technical product is 96% pure, with the balance impurities related to acetochlor. It is slightly soluble in water and has low volatility (does not evaporate easily).

Dow AgroSciences sells herbicide formulations containing acetochlor alone or in mixtures with other herbicides under several trade names around the world. Some examples of these formulations are listed in the table below. Please note that microencapsulated (ME) formulations are sometimes called capsule suspension (CS) formulations.

Tradename	Active Ingredients	Formulation Type
Surpass™ herbicide	acetochlor	emulsifiable concentrate (EC)
TopNotch™ herbicide	acetochlor	microencapsulated (ME)
Keystone™ herbicide	acetochlor + atrazine	suspension concentrate (SC)
FulTime™ herbicide	acetochlor + atrazine	microencapsulated (ME)
SureStart™ herbicide	acetochlor + clopyralid + flumetsulam	emulsion, oil in water (EW)
Trophy™ 40CS	acetochlor	microencapsulated (ME)
Trophee™	acetochlor	emulsifiable concentrate (EC)

Acetochlor formulations from Dow AgroSciences often contain a dichlormid (R-25788) safener to reduce risk of phytotoxicity of acetochlor to corn from germination through early seedling stage.

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Product Uses^{8,9}

Acetochlor products are registered in many countries around the world for use by farmers to control broadleaf and grass weeds in commercial field corn. Acetochlor herbicides can be applied to the soil from 30 days prior to planting until the corn is 11 inches tall.¹⁰ The amount of acetochlor applied is adjusted based on soil texture and percent organic matter. These formulations are typically applied only once in the spring. Corn fields treated with acetochlor products can be rotated to grain sorghum (milo), soybeans, wheat, tobacco, corn, and several other crops the next year without risk of injury to the rotation crop.

Acetochlor is also registered outside the U.S. for control of weeds in sunflower, soybeans, sweet corn, sugarcane, and a few other minor crops in various countries around the globe.

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Exposure Potential

Based on the uses for acetochlor, the public could be exposed through:

- **Workplace exposure**¹¹ – Exposure can occur in an acetochlor manufacturing or formulating facility. Workers could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing and formulating facility should have a thorough training program for employees and appropriate work processes and safety equipment in place to limit unnecessary exposure. Agricultural workers could be exposed to acetochlor during field application. Wearing proper protective equipment and following label instructions will reduce risk of exposure. See [Health Information](#).
- **Consumer exposure to products containing acetochlor** – Consumer exposure to acetochlor is expected to be minimal. Acetochlor is not available for home use. Acetochlor use is restricted in some field situations, based on soil type and proximity to ground or surface water. The Acetochlor Registration Partnership ([ARP](#)) stewards the use of acetochlor in the United States.¹² Based on ARP test results, the EPA has concluded that chronic food and drinking water risk estimates do not exceed the EPA's level of concern.¹³ See [Health Information](#).
- **Environmental releases**¹⁴ – For small spills, wear appropriate protective clothing and eye protection to prevent skin and eye contact. Absorb spills with sand, sawdust, Zorbball, or dirt and shovel material into an open drum. Wash exposed body areas thoroughly after handling. See [Environmental](#), [Health](#) and [Physical Hazard Information](#).
- **Large release** – In the event of a large spill, acetochlor should be contained by creating ditches or dikes and then collected and disposed of according to applicable governmental requirements. Prevent material from reaching drainage ditches, sewage system, and/or groundwater. Personnel engaged in clean up of spills should observe proper skin and eye protection practices. Report large spills to Dow AgroSciences immediately at 800-992-5994 or visit www.dowagro.com/rc/response/ to access Dow AgroSciences in a specific geographic area.
- **In case of fire** – Self-contained breathing apparatus (SCBA) with full-face piece and full protective clothing must be worn. Fight fire with foam, carbon-dioxide, or dry-chemical fire extinguisher. See [Environmental](#), [Health](#) and [Physical Hazard Information](#).

For more information, see the relevant [Safety Data Sheet](#).

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Health Information¹⁵

Eye and Skin Contact

Eye contact with acetochlor may cause slight irritation. Brief skin contact may cause burns. Symptoms may include pain, severe local redness, and tissue damage. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Prolonged or repeated skin contact may cause allergic reactions in some individuals.

Ingestion

Low toxicity if swallowed.

Inhalation

At room temperature, exposure to vapor is minimal due to the low volatility of acetochlor.

Cancer and Birth Defect Information

Acetochlor has caused cancer in laboratory animals. Acetochlor did not cause birth defects in laboratory animals.

For more information, see the relevant [Safety Data Sheet](#).

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Environmental Information^{16,17}

Acetochlor does not appear to pose a significant risk of concentrating through the food chain. Acetochlor is highly toxic to aquatic organisms, slightly toxic to birds on an acute basis, and practically nontoxic to birds on a dietary basis.

For more information, see the relevant [Safety Data Sheet](#).

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Physical Hazard Information¹⁸

Acetochlor is stable under normal storage and use conditions, but it can decompose at temperatures above 180°F (82°C). If acetochlor is involved in a fire, carbon monoxide may be one of the combustion products.

For more information, see the relevant [Safety Data Sheet](#).

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Regulatory Information

Regulations exist that govern the manufacture, sale, transportation, use, and/or disposal of acetochlor. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant [Safety Data Sheet](#).

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Additional Information

- Safety Data Sheet (<http://www.dowagro.com/label/index.htm>)
- Dow AgroSciences LLC website: Acetochlor (<http://www.dowagro.com/usag/acetochlor/index.htm>)
- *Acetochlor: The Ideal Tool for Every Corn Acre*, Dow AgroSciences LLC, Form No. M01-176-020, May 2005 (http://www.dowagro.com/PublishedLiterature/dh_005b/0901b8038005be4f.pdf?filepath=/PublishToInternet/InternetDOWAGRO/usag/pdfs/noreg/010-41132&fromPage=BasicSearch)
- Acetochlor Registration Partnership (ARP) website (<http://www.arpinfo.com/>)
- *Acetochlor*, U.S. Environmental Protection Agency website, Pesticides: Regulating Pesticides (<http://www.epa.gov/oppefed1/aceto/>)
- *Acetochlor/Alachlor: Cumulative Risk Assessment for the Chloroacetanilide Pesticides*, U.S. Environmental Protection Agency, Office of Pesticide Programs, March, 2006 (http://www.epa.gov/pesticides/cumulative/chloro_cumulative_risk.pdf)
- *Overview of Acetochlor Risk Assessment*, U.S. Environmental Protection Agency, November 23, 2005 (<http://www.regulations.gov/fdmpublic/component/main>)
Docket I.D. EPA-HQ-OPP-2005-0227, Document I.D. EPA-HQ-OPP-2005-0227-0003
- *Questions and Answers on the Conditional Registration of Acetochlor*, U.S. Environmental Protection Agency website, Pesticides: Regulating Pesticides (<http://www.epa.gov/oppefed1/aceto/>)

For more business information about acetochlor, visit the [Dow AgroSciences](#) web site. (www.dowagro.com)

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References

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- ¹ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 2.
- ² Dow AgroSciences website: Acetochlor. (<http://www.dowagro.com/usag/acetochlor/prod/>)
- ³ *Questions and Answers on the Conditional Registration of Acetochlor*, U.S. Environmental Protection Agency website, Pesticides: Regulating Pesticides, page 6. (<http://www.epa.gov/oppefed1/aceto/>)
- ⁴ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 1.
- ⁵ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, pages 2 and 3.
- ⁶ *Overview of Acetochlor Risk Assessment*, U.S. Environmental Protection Agency Docket I.D. EPA-HQ-OPP-2005-0227, Document I.D. EPA-HQ-OPP-2005-0227-0003, November 23, 2005, page 2. (<http://www.regulations.gov/fdmspublic/component/main>)
- ⁷ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 2.
- ⁸ Dow AgroSciences website: Acetochlor. (<http://www.dowagro.com/usag/acetochlor/prod/>)
- ⁹ *Acetochlor: The Ideal Tool for Every Corn Acre*, Dow AgroSciences LLC, Form No. M01-176-020, May 2005, page 2.
- ¹⁰ Dow AgroSciences website: Acetochlor. (<http://www.dowagro.com/usag/acetochlor/prod/>)
- ¹¹ *Questions and Answers on the Conditional Registration of Acetochlor*, U.S. Environmental Protection Agency website, Pesticides: Regulating Pesticides, page 6. (<http://www.epa.gov/oppefed1/aceto/>)
- ¹² Acetochlor Registration Partnership (ARP) website, pages 1–7. (<http://www.arpinfo.com/>)
- ¹³ *Overview of Acetochlor Risk Assessment*, U.S. Environmental Protection Agency, Docket I.D. EPA-HQ-OPP-2005-0227, Document I.D. EPA-HQ-OPP-2005-0227-0003, November 23, 2005, page 5. (<http://www.regulations.gov/fdmspublic/component/main>)
- ¹⁴ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 2.
- ¹⁵ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 1.
- ¹⁶ *Questions and Answers on the Conditional Registration of Acetochlor*, U.S. Environmental Protection Agency website, Pesticides: Regulating Pesticides, page 8. (<http://www.epa.gov/oppefed1/aceto/>)
- ¹⁷ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, page 3.
- ¹⁸ *Acetochlor Technical Herbicide, Material Safety Data Sheet*, Dow AgroSciences, MSDS: 007045, June 3, 2003, pages 2 and 3.

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NOTICES:

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