

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

TopNotch* HERBICIDE

Effective Date: 24-Mar-10
Product Code: 83032
MSDS: 007031

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: TopNotch* Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Tan colored opaque capsule suspension. May cause eye & skin irritation. May cause corneal injury. Toxic to aquatic organisms and avian.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Acetochlor	CAS # 034256-82-1	33.7%
Dichlormid	CAS # 037764-25-3	5.8%
Balance		60.5%

4. FIRST AID:

EYES: Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items, which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: >200 °F (>93 °C)
METHOD USED: TCC

EXTINGUISHING MEDIA: Water fog, alcohol foam, carbon dioxide, dry chemical, or halogenated agents.

FIRE-FIGHTING EQUIPMENT: A self-contained breathing apparatus and full protective clothing must be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Sweep up small spills and place in a suitable container for disposal. Report large spills to Dow AgroSciences at 1-800-992-5994. Wear protective clothing and self contained breathing apparatus if dust is present. Do not use water to clean up.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

STORAGE: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. Do not store with food, feedstuffs, fertilizers and seeds. See product label for further handling/storage precautions relative to the end use of this product. Reduce stacking height where local conditions can affect packaging strength.

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

TopNotch* HERBICIDE

Effective Date: 24-Mar-10
Product Code: 83032
MSDS: 007031

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES: Although some of the additives used in this product may have exposure guidelines, these additives are encapsulated in the product and no exposure would be expected under normal handling conditions.

ENGINEERING CONTROLS: Use only with adequate ventilation. Local ventilation may be necessary for some operations.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses. If exposure causes eye discomfort, use a NIOSH approved full-face respirator.

SKIN PROTECTION: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items, which cannot be decontaminated, such as shoes, belts, and watchbands, should be removed and disposed of properly.

RESPIRATORY PROTECTION: Use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: Not determined
SPECIFIC GRAVITY: 1.1629 g/mL @ 25°C
DENSITY @ 68°F (20°C): 9.59 lbs/gal¹
SOLUBILITY IN WATER: Not determined
VISCOSITY@ 68°F¹ (20°C): 140 – 400 cP²
APPEARANCE: Tan colored capsule suspension
ODOR: Not determined
pH: 10.1 (1% w/w dilution in deionized water)

¹Varies with temperature
²Varies with shear rate

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Stable under normal storage conditions.

INCOMPATIBILITY: Acids. Aqueous solutions will attack aluminum and galvanized steel, producing flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS: If product is involved in a fire, carbon dioxide, carbon monoxide, hydrogen chloride, nitrogen dioxide, and sulfur dioxide may be formed.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYES: May cause slight eye irritation.

SKIN: Prolonged or repeated contact may cause skin irritation. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rats for a similar material is >2000 mg/kg. Similar materials have been shown to cause allergic skin reactions when tested in guinea pigs. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals.

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

TopNotch* HERBICIDE

Effective Date: 24-Mar-10
Product Code: 83032
MSDS: 007031

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats for a similar material is >5000 mg/kg.

INHALATION: Prolonged excessive exposure may cause adverse effects. May cause irritation to the upper respiratory tract (nose and throat).

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For acetochlor and dichlormid, in animals, effects have been reported on the following organs: blood, central nervous system, kidney, liver, testes, eye, respiratory tract, and muscles.

CANCER INFORMATION: Acetochlor has caused cancer in laboratory animals. Tumors were observed only at levels which produced significant toxicity thus exceeding the maximum tolerated dose. Dichlormid did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus.

REPRODUCTION EFFECTS: For acetochlor, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For dichlormid, in animal studies, did not interfere with reproduction.

MUTAGENICITY: For acetochlor, in-vitro mutagenicity studies were negative in some cases and positive in other cases. Animal mutagenicity studies were predominantly negative. For dichlormid, in-vitro mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for acetochlor. Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is medium (Koc is between 150 and 500).

Based largely or completely on information for dichlormid. Bioconcentration potential is low (BCF is <100 or Log Pow <3). Potential for mobility in soil is medium (Koc is between 150 and 500).

DEGRADATION & PERSISTENCE:

Based largely or completely on information for dichlormid. Degradation is expected in the atmospheric environment within minutes to hours.

ECOTOXICOLOGY:

Based largely or completely on information for acetochlor. Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ between 0.1 and 1 mg/L in the most sensitive species tested).

Material is slightly toxic to birds on an acute basis (LD₅₀ between 501 and 2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

Based largely or completely on information for dichlormid. Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is >100 mg/L in the most sensitive species tested).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

TopNotch* HERBICIDE

Effective Date: 24-Mar-10
Product Code: 83032
MSDS: 007031

14. TRANSPORT INFORMATION:

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: ACETOCHLOR

Hazard Class: 9 **ID Number:** UN 3082

Packing Group: PG III

EMS Number: F-A,S-F

Marine pollutant.: Yes

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: ACETOCHLOR

Hazard Class: 9 **ID Number:** UN 3082

Packing Group: PG III

Cargo Packing Instruction: 914

Passenger Packing Instruction: 914

Additional Information

MARINE POLLUTANT

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical(s) known to the State of California to cause cancer. The chemical is Acetochlor.

STATE RIGHT-TO-KNOW: This product is not known to contain any substances subject to the disclosure requirements of

Pennsylvania

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA OR SUPERFUND): To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	1
Flammability	1
Reactivity	0

MATERIAL SAFETY DATA SHEET



TopNotch* HERBICIDE

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Effective Date: 24-Mar-10
Product Code: 83032
MSDS: 007031

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 14 & 15
Referenced: DR-0379-9744
Replaces MSDS Dated: 26-Jan-06
Document Code: D03-139-005
Replaces Document Code: D03-139-004

The Information Herein Is Given In Good Faith, But No
Warranty, Express or Implied, Is Made. Consult Dow
AgroSciences for Further Information.