

# MATERIAL SAFETY DATA SHEET



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

Effective Date: 9/12/00  
Product Code: 53037  
MSDS: 004774

## HORNET\* HERBICIDE

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Hornet\* Herbicide

#### COMPANY IDENTIFICATION:

Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

Clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid	CAS# 001702-17-6	62.5%
Flumetsulam: N-(2,6-difluorophenyl)-5-methyl-1,2,4-triazolo-(1,5a)-pyrimidine-2-sulfonamide	CAS# 098967-40-9	23.1%
Other ingredients, total, including: Impurities from active ingredients Proprietary surfactants and binders		14.4%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### 3. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Hazardous Material. Tan to brown granule. May cause severe eye irritation with corneal injury, which may result in permanent impairment of vision, even blindness. LD<sub>50</sub> for skin absorption in rabbits is >2000 mg/kg. Oral LD<sub>50</sub> for rats is 4444 mg/kg (males) and 3126 mg/kg (females).

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

**EYE:** May cause severe irritation with corneal injury, which may result in permanent impairment of vision, even blindness.

**SKIN:** Prolonged exposure may cause skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >2000 mg/kg. Did not cause allergic skin reactions when tested in guinea pigs.

**INGESTION:** Single dose oral toxicity is low. The oral LD<sub>50</sub> for rats is 4444 mg/kg (males) and 3126 mg/kg (females). Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

**INHALATION:** Single exposure to dust or vapors is not likely to be hazardous. Dust may cause irritation to upper respiratory tract (nose and throat).

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** For the active ingredient(s), in animals, effects have been reported on the following organs: liver and kidney. Observations in animals include lethargy.

**CANCER INFORMATION:** The active ingredients did not cause cancer in laboratory animals.

**TERATOLOGY (BIRTH DEFECTS):** Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals at doses several times greater than those expected during normal exposure. For flumetsulam, birth defects are unlikely. Even exposure having an adverse effect on the mother should have no effect on the fetus.

**REPRODUCTIVE EFFECTS:** The active ingredients did not interfere with reproduction in animal studies.

### 4. FIRST AID:

**EYES:** Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

**SKIN:** Wash off in flowing water or shower.

**INGESTION:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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**INHALATION:** Remove individual to fresh air. Consult a physician.

**NOTE TO PHYSICIAN:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** Not applicable - granular material

**FLAMMABLE LIMITS:** LFL: Not applicable  
UFL: Not applicable

**EXTINGUISHING MEDIA:** Water fog, foam, CO<sub>2</sub>, dry chemical

**FIRE AND EXPLOSION HAZARDS:** Toxic, irritating gases may be formed under fire conditions. Do not allow product-contaminated water from fire-fighting to enter water supplies.

**FIRE-FIGHTING EQUIPMENT:** Use positive-pressure, self-contained breathing apparatus and full protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS:** Contain and sweep up spills. Scoop into suitable containers for disposal. Report large spills to Dow AgroSciences on 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Do not get in eyes or on clothing. Avoid skin contact. Avoid breathing vapors or spray mist. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Store in original container in a dry area.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

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

**EXPOSURE GUIDELINE(S):** 3,6-Dichloropicolinic acid (clopuralid): Dow AgroSciences Industrial Hygiene Guide is 10 mg/M<sup>3</sup>.  
Flumetsulam: Dow AgroSciences Industrial Hygiene Guide is 10 mg/M<sup>3</sup>.

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline.

### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator. In dusty atmospheres, use a NIOSH approved dust respirator.

**SKIN PROTECTION:** Use gloves impervious to this material when prolonged or frequently repeated contact could occur.

**EYE PROTECTION:** Use chemical goggles. Eye wash fountain should be located in immediate work area.

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

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**BOILING POINT:** Not applicable  
**VAPOR PRESSURE:** Not determined  
**VAPOR DENSITY:** Not determined  
**SOLUBILITY IN WATER:** Water dispersible  
**SPECIFIC GRAVITY:** Not applicable  
**APPEARANCE:** Tan to brown granules  
**MELTING POINT:** 149-151°C, 300-304°F (clopuralid)  
**ODOR:** No appreciable odor

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### 10. STABILITY AND REACTIVITY:

**STABILITY:** (CONDITIONS TO AVOID) Stable at normal handling and storage conditions.

**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO AVOID) Clopyralid can react violently with aluminum above 110°C, 230°F when water is present. Avoid contact with aluminum.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic, irritating gases may be formed under fire conditions, including nitrogen oxides and hydrogen chloride.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**MUTAGENICITY:** For the active ingredients, in-vitro and animal mutagenicity studies were negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

Based largely or completely on information for the active ingredient(s). Bioconcentration potential is low (BCF is <100 or Lor Pow <3)

Potential for mobility in soil is very high (Koc between 0 and 50).

#### DEGRADATION & PERSISTENCE:

Based largely or completely on information for clopyralid. Biodegradation under aerobic laboratory conditions is below detectable limits (<2.5%).

The photolysis half-life in water is 261 days.

The photolysis half-life in soil is >12 years.

Under aerobic soil conditions the half-life is 71 days.

#### ECOTOXICOLOGY:

Based largely or completely on information for the active ingredient(s).

Material is practically non-toxic to aquatic organisms on an acute basis ( $LC_{50}/EC_{50} > 100$  mg/L in most sensitive species).

### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility. Follow all local, state and federal requirements for disposal.

### 14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product-shipping papers, or contact your Dow AgroSciences representative.

### 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 Sections 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

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.

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**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Proprietary Ingredient	Proprietary	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

**OSHA HAZARD COMMUNICATION STANDARD:** This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 3  
Flammability 1  
Reactivity 1

**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.

### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Sections: 3, 7, 8, & 12  
Reference: DR-0338-8736  
Replaces MSDS Dated: 12/02/98  
Document Code: D03-038-324  
Replaces Document Code: D03-038-323

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