

MATERIAL SAFETY DATA SHEET



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

Effective Date: 9/2/03
Product Code: 51412
MSDS: 005486

FirstRate* HERBICIDE

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: FirstRate* Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Cloransulam-methyl (DE-565)	CAS # 147150-35-4	84%
Inert ingredients, Total, Including		16%
Methylene Chloride	CAS # 000075-09-2	
Starch	CAS # 009005-25-8	

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 Chemical. Brown granule with a sweet odor. May cause eye irritation. LD₅₀ for skin absorption is >2000 mg/kg. Oral LD₅₀ is >5000 mg/kg. Inhalation LC₅₀ is >3.77 mg/L (aerosol) for 4 hours. Toxic to aquatic organisms.

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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.

EYES: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.

SKIN: Prolonged contact is essentially non-irritating to skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >2000 mg/kg. Did not cause allergic skin reactions when tested in guinea pigs.

INGESTION: Very low toxicity if swallowed. The oral LD₅₀ for rats is >5000 mg/kg. Harmful effects not anticipated from swallowing small amounts.

INHALATION: No adverse effects are anticipated from single exposure to dust. Vapors are unlikely due to physical properties. The LC₅₀ for rats is >3.77 mg/L (aerosol) for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: In animals, effects have been reported on the following organs: blood, kidney, liver, testes and thyroid gland. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

CANCER INFORMATION: Did not cause cancer in long-term animal studies.

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

REPRODUCTIVE EFFECTS: In animal studies, did not interfere with reproduction.

4. FIRST AID:

EYE: 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: Wash skin with plenty of water.

INGESTION: No emergency medical treatment necessary.

INHALATION: Move person to fresh air; if effects occur, consult a physician.

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

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5. FIRE FIGHTING MEASURES:

FLASH POINT: Not determined (expected to be >200°F based on components).

FLAMMABLE LIMITS: Not determined.

EXTINGUISHING MEDIA: Use water fog, foam, CO₂, or dry chemical.

FIRE AND EXPLOSION HAZARDS: Fire and explosion potential not determined but expected to be low.

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

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Sweep up and place into plastic bags suitable for disposal. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid eye and skin contact. Do not take internally. Wash thoroughly after handling and before eating or smoking. 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 GUIDELINES:

Methylene chloride: ACGIH TLV is 50 ppm, A3. OSHA PEL is 25 ppm TWA, 125 ppm STEL. Interim IHG is 50 ppm, 250 ppm, STEL.

Cloransulam-methyl: Dow AgroSciences Industrial Hygiene Guide is 3 mg/M³, TWA.

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

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Safety glasses should be sufficient for most operations; however, for dusty operations wear chemical goggles.

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed. Use gloves chemically resistant to this material.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. In dusty atmospheres, use a NIOSH approved particulate respirator.

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

SPECIFIC GRAVITY: Not applicable

VAPOR DENSITY (AIR = 1): Not determined

ODOR: Sweet

SOLUBILITY IN WATER: Disperses in water

VAPOR PRESSURE: Not determined

APPEARANCE: Brown granule

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Should be stable at normal temperatures and storage conditions.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) PVA packaging is incompatible (will not dissolve) in liquid fertilizer. For main compounds none reasonably foreseeable.

HAZARDOUS DECOMPOSITION PRODUCTS: If product is involved in fire, oxides of nitrogen and halogen derivatives may be formed.

HAZARDOUS POLYMERIZATION: Not known to occur.

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11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: In-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Measured log octanol/water partition coefficient (Log Pow) is 1.12.

Bioconcentration potential is low (BCF <100 or Log Pow <3).

ECOTOXICOLOGY:

Material is slightly toxic to aquatic organisms on an acute basis (LC₅₀ between 10 and 100 mg/L in most sensitive species).

Acute LC₅₀ for bluegill (*Lepomis macrochirus*) is >150 mg/L.

Acute LC₅₀ for rainbow trout (*Oncorhynchus mykiss*) is >90 mg/L.

Acute LC₅₀ for water flea (*Daphnia magna*) is 98 mg/L.

Acute LC₅₀ for grass shrimp (*Palaemonetes pugio*) is >120 mg/L.

Acute LC₅₀ for tidewater silverside (*Menidia beryllina*) is >120 mg/L.

Acute EC₅₀ for shell deposition inhibition in eastern oyster (*Crassostrea virginica*) is >110 mg/L.

Maximum acceptable toxicant concentration (MATC) is 31 mg/L for *Daphnia magna*.

Material is practically non-toxic to birds on an acute basis (LD₅₀ is >2000 mg/kg).

Acute oral LD₅₀ for bobwhite (*Colinus virginianus*) is >2200 mg/kg.

Growth inhibition EC₅₀ for green alga (*Selenastrum capricornutum*) is 3.5 µg/L.

Growth inhibition EC₅₀ for diatom (*Navicula sp.*) is 1.8 mg/L.

Growth inhibition EC₅₀ for marine diatom (*Skeletonema costatum*) is 3.6 mg/L.

Growth inhibition EC₅₀ for blue-green alga (*Anabaena flos-aquae*) is 12 µg/L.

Growth inhibition EC₅₀ for duckweed (*Lemna sp.*) is 3.4 µg/L.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Dispose of in accordance with all local, state, and federal requirements. Contact Dow AgroSciences for further information.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

This material is not regulated for transportation.

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: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME CAS NUMBER CONCENTRATION

Methylene chloride	000075-09-2	0.3%
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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 categories:

An immediate health hazard
A delayed health hazard

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CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains a chemical(s) known to the State of California to cause cancer. The chemical is Methylene Chloride CAS # 000075-09-2

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

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
Methylene Chloride	000075-09-2	PA1 NJ2 NJ3
Starch	009005-25-8	PA1

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

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

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

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	1
Flammability	0
Reactivity	1

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Methylene Chloride	000075-09-2	1000	0.3%

RCRA Categorization

USEPA Hazardous Waste #:

Methylene Chloride - CAS # 000075-09-2: U080

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 3, 4, 8, 11, 14, & 15
Reference: DR-0314-2107
Replaces MSDS dated: 6/11/99
Document Code: D03-034-444
Replaces Document Code: D03-034-443

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