

MATERIAL SAFETY DATA SHEET



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

Effective Date: 10-Apr-07
Product Code: 55508
MSDS: 005833

STRONGARM* HERBICIDE

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Strongarm* Herbicide

COMPANY IDENTIFICATION:

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

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Brown granule. May cause pain and eye irritation. May cause skin irritation. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
Diclosulam	145701-21-9	84.0
Starch	9005-25-8	4.4
Methylene chloride	75-09-2	0.6
Quinoline Hydrochloride	530-64-3	0.3
Methanol	67-56-1	0.2
Balance		10.5

4. FIRST AID:

EYE: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, and then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

SKIN: Wash skin with plenty of water.

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

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.

5. FIRE FIGHTING MEASURES:

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

FLAMMABLE LIMITS: LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: 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: Wear suitable protective clothing and eye protection to prevent skin and eye contact. Sweep up small spills and shovel into an open drum. Wash exposed body areas thoroughly after handling. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Avoid contact with eyes and skin. Keep away from food, drink and animal feeding stuffs. Exercise due caution to prevent damage to the container. Store product in a cool, dry, well ventilated area, in the original container.

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:

Diclosulam: Dow AgroSciences Industrial Hygiene Guideline is 3 mg/M³ TWA.

Starch: ACGIH TLV is 10 mg/M³ TWA. OSHA PEL is 5 mg/M³, respirable and 15 mg/M³, total dust.

Methylene chloride: ACGIH TLV is 500 ppm TWA, SKIN. OSHA TWA is 25 ppm and OSHA STEL is 125 ppm.

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Quinoline Hydrochloride: WEEL 8 hr. TWA is 0.005 mg/M³.
Methanol: ACGIH 8 hr. TLV is 200 ppm TWA and 15 min
STEL is 250 ppm. OSHA PEL is 200 ppm.

A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

ENGINEERING CONTROLS: Provide general and/local exhaust ventilation to control airborne levels below the exposure guidelines. Lethal concentrations may exist in areas with poor ventilation.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

SKIN PROTECTION: Use gloves chemically resistant to this material and wear clean body-covering.

RESPIRATORY PROTECTION: In dusty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: particulate filter.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

MELTING POINT: Not determined
SOLUBILITY IN WATER: Disperses in water
pH: 5.0 - 8.0 (10% mixture in water)
VAPOR PRESSURE: Not determined
BULK DENSITY: 35-60 lbs/ft³
APPEARANCE: Brown Granule
ODOR: No distinctive odor

10. STABILITY AND REACTIVITY:

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

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) None reasonably foreseeable.

HAZARDOUS DECOMPOSITION PRODUCTS: If product is involved in a fire, oxides of nitrogen, oxides of sulfur, and halogen derivatives 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 pain disproportionate to the level of irritation to eye tissues. May cause moderate eye irritation.

SKIN: The LD₅₀ for skin absorption in rabbits is >2,000 mg/kg. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Brief contact may cause moderate skin irritation with local redness.

INGESTION: The oral LD₅₀ for rats is >5,000 mg/kg. Very low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

INHALATION: The inhalation LC₅₀ for rats is >6.7 mg/L. No adverse effects are anticipated from single exposure to dust. Vapors are unlikely due to physical properties.

SYSTEMIC (OTHER TARGET ORGANS) EFFECTS: In animals, effects have been reported on the following organs: kidney and liver.

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CANCER INFORMATION: Methylene chloride has been shown to increase the incidence of malignant tumors in mice and benign tumors in rats. Other animal studies, as well as several human epidemiology studies, failed to show a tumorigenic response. Methylene chloride is not believed to pose a measurable carcinogenic risk to man when handled as recommended. Studies have shown that tumors observed in mice are unique to that species.

TERATOLOGY (BIRTH DEFECTS): Methylene chloride has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Methanol has caused birth defects in mice at doses non-toxic to the mother as well as slight behavioral effects in offspring of rats.

REPRODUCTIVE EFFECTS: Diclosulam, methylene chloride and methanol, in animal studies, did not interfere with reproduction.

MUTAGENICITY: For diclosulam, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for diclosulam. Bioconcentration potential is low (BCF <100 or Log Pow <3).

ECOTOXICOLOGY:

Based largely or completely on information for diclosulam. Material is slightly toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 10 and 100 mg/L in most sensitive species).

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.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION INFORMATION:

For all shipments:
This material is not regulated for transport.

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:

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>CONCENTRATION</u>
Methylene Chloride	75-09-2	0.6%

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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

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 chemicals are Methylene Chloride (CAS # 75-09-2) and Quinoline Hydrochloride (CAS # 530-64-3).

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
Starch	9005-25-8	PA1

PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).

PA2=Pennsylvania Environmental Hazardous substance (present at > or = 1.0%).

PA3=Pennsylvania Workplace Hazardous Substance (present at > or = to 1.0%).

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 No.	RQ	% in Product
Methylene Chloride	75-09-2	1000 lbs.	0.6%
Quinoline Hydrochloride	530-64-3	5000 lbs.	0.3%
Methanol	67-56-1	5000 lbs.	0.2%

NFPA Ratings:

Health	2
Flammability	0
Reactivity	1

16. OTHER INFORMATION:

MSDS STATUS:

Revised Sections: 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, & 15
Reference: DR-0342-6720
Replaces MSDS dated: 3/22/00
Document Code: D03-044-004
Replaces Document Code: D03-044-003

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

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