

MATERIAL SAFETY DATA SHEET

AMPLIFY* HERBICIDE

MONSANTO COMPANY

St. Louis, MO 63167

Emergency Phone: In case of an emergency endangering health or the environment involving this product, call Dow AgroSciences 1-800-992-5994

For product information or assistance in using this product, call toll-free 1-800-332-3111

Effective Date: 12/07/2000

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Amplify* Herbicide

EPA Reg. Number: 62719-275-524

COMPANY IDENTIFICATION:

MONSANTO COMPANY
800 N. Lindbergh Blvd.
St. Louis, MO 63167

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 in rabbits is >2000 mg/kg. Oral LD₅₀ for rats is >5000 mg/kg. Inhalation LC₅₀ for rats is >3.77 mg/L (aerosol) for 4 hours. Toxic to aquatic organisms.
EMERGENCY PHONE NUMBER for Dow AgroSciences: 800-992-5994

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. A single prolonged exposure is not likely to result in the material being absorbed through skin in 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: Single dose oral toxicity is extremely low. The oral LD₅₀ for rats is >5000 mg/kg. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

INHALATION: Single exposure to dust is not likely to be hazardous. Vapors are unlikely due to physical properties. The LC₅₀ for rats is >3.77 mg/L (aerosol) for four 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, has been shown not to interfere with reproduction.

4. FIRST AID:

EYE: Flush eyes with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

INHALATION: Remove to fresh air if effects occur. 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.

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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.

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 short-term exposure limit. Chloransulam-methyl: Dow AgroSciences Industrial Hygiene Guide is 3 mg/M³.

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 impervious to this material.

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

APPLICATORS AND ALL OTHER HANDLERS: Please 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: (CONDITONS 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 mutagenicity 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 at 1-800-992-5994 for further information.

14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product shipping papers or call Dow AgroSciences at 1-800-992-5994 for further information.

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.

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.

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%

16. OTHER INFORMATION:

MSDS STATUS: New

Reference: amplify.D00

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Monsanto Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.