

# MATERIAL SAFETY DATA SHEET



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

Effective Date: 27-Jun-07  
Product Code: 84631  
MSDS: 000246

## DMA\* 4 IVM HERBICIDE

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** DMA\* 4 IVM Herbicide

#### COMPANY IDENTIFICATION:

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

### 2. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Brown liquid with an amine odor. May cause severe eye irritation with corneal injury.

**EMERGENCY PHONE NUMBER:** 800-992-5994

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
2,4-D Dimethylamine Salt	2008-39-1	46.3
Dimethylamine	124-40-3	1.0
Balance		52.7

### 4. FIRST AID:

**EYES:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

**SKIN:** Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly.

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

**INHALATION:** Move 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:** 190°F (88C)

**METHOD USED:** TCC

#### FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

**EXTINGUISHING MEDIA:** Water fog

**FIRE & EXPLOSION HAZARDS:** Noxious fumes may be produced under fire conditions. Contain water from fire fighting to prevent entry to surface or ground water.

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

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Absorb small spills in an absorbent material such as sawdust, sand or clay. Dike area of large spills and call Dow AgroSciences at 800-992-5994. Wear protective clothing and self-contained breathing apparatus if vapors are present. Do not use water to clean up.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Harmful if swallowed or absorbed through skin. Causes severe eye irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Keep container tightly closed when not in use. Do not store below temperature of 25°F (-4C). If frozen (crystallized), warm to 65-75°F (19-24C) and re-dissolve before using by rolling or shaking the container. Store in a safe manner in original container only, in a cool, dry place. Reduce stacking height where local conditions can affect packaging strength. See product label for handling/storage precautions relative to the end use of this product.

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### 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:

2,4-D Dimethylamine Salt: None established; ACGIH TLV and OSHA PEL are 10 mg/M<sup>3</sup> for the acid.

**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:

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge with particulate pre-filter.

**SKIN PROTECTION:** Use protective clothing chemically resistant to this material. Selection of specific items such as boots, apron, faceshield, or full-body suit will depend on the task. Remove contaminated clothing immediately, wash skin areas with soap and water, and launder clothing before reuse. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

**EYE/FACE 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:** >212°F (100C)  
**VAPOR PRESSURE:** 8.0 x 10<sup>-10</sup> mmHg @ 25C  
**VAPOR DENSITY:** <1 water vapor  
**SOLUBILITY IN WATER:** Infinite  
**SPECIFIC GRAVITY:** 1.17 approx. @ 68/68°F (20C)  
**APPEARANCE:** Brown liquid  
**ODOR:** Amine

### 10. STABILITY AND REACTIVITY:

**STABILITY: (CONDITIONS TO AVOID)** Stable under normal storage conditions. Do not store below temperature of 25°F (-4°C). If frozen (crystallized), warm to 65-75°F (19-24°C) and re-dissolve before using by rolling or shaking the container. Avoid excessive temperatures.

**INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)** Acids and oxidizing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen chloride and nitrogen oxide under fire conditions.

**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.

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

**SKIN:** Essentially non-irritating to skin. Prolonged or widespread contact may result in absorption of potentially harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >1000 mg/kg.

**INGESTION:** Low toxicity if swallowed. The oral LD<sub>50</sub> for rats is ~1000 mg/kg. 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:** No adverse effects are anticipated from single exposure to vapor.

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**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** In animals, effects have been reported on the following organs: liver, kidney, and gastrointestinal tract, muscles. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea.

**CANCER INFORMATION:** Various animal cancer tests have shown no reliable positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative.

**TERATOLOGY (BIRTH DEFECTS):** Did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**REPRODUCTIVE EFFECTS:** Excessive dietary levels of 2,4-D acid have caused decreased weight and survival in offspring in a rat reproduction study.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** In-vitro genetic toxicity studies were negative. The data presented are for the following material: 2,4-D acid: animal genetic toxicity studies were predominantly negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

No bioconcentration is expected because of the relatively high water solubility.

#### DEGRADATION AND PERSISTENCE:

Biodegradation under aerobic static laboratory conditions is high (BOD<sub>20</sub> or BOD<sub>28</sub>/ThOD >40%).

#### ECOTOXICOLOGY:

Material is practically non-toxic to aquatic organisms on an acute basis (LC<sub>50</sub> or EC<sub>50</sub> is >100 mg/L in 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.

### 14. TRANSPORT INFORMATION:

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

**Package sizes less than ~22 gallons by land:**  
Not regulated

**Package sizes by land between 22 gallons and bulk (119 gallons):**  
UN3082/ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D SALT)/9/PGIII/RQ (2,4-D SALT).

**Package sizes >119 gallons (bulk) by land:**  
UN3082/ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D SALT)/9/PGIII/RQ (2,4-D SALT)/MARINE POLLUTANT (2,4-D SALT).

**Package sizes by vessel less than 22 gallons:**  
UN3082/ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D SALT)/9/PGIII/MARINE POLLUTANT (2,4-D SALT).

**Package sizes > 22 gallons by vessel:**  
UN3082/ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D SALT)/9/PGIII/RQ (2,4-D SALT)/MARINE POLLUTANT (2,4-D SALT).

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### 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>
Dimethylamine	124-40-3	1.0%

**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  
A fire hazard

**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.

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>LIST</u>
Dimethylamine	124-40-3	NJ1 NJ2 NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at > or = to 0.1%).  
NJ2=New Jersey Environmental Hazardous Substance (present at > or = to 1.0%).  
NJ3=New Jersey Workplace Hazardous Substance (present at > or = to 1.0%).  
PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).  
PA3=Pennsylvania Environmental Hazardous Substance (present at > or = 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:**

<u>Category</u>	<u>Rating</u>
Health	3
Flammability	2
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 release.

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>RQ</u>	<u>% IN PRODUCT</u>
Dimethylamine	124-40-3	1000 lbs.	1.0

### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Sections: 14  
Reference: DR-0115-0523  
Replaces MSDS Dated: 21-May-07  
Document Code: D03-141-004  
Replaces Document Code: D03-141-003

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