

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Hi-Yield® 2, 4-D Amine No. 4  
**EPA No.:** 228-145-7401

#### **COMPANY IDENTIFICATION:**

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, TX. 75418

### 2. HAZARDOUS IDENTIFICATIONS:

#### **Emergency Overview:**

**Appearance and Odor:** Clear, pale yellow liquid with a phenolic-amine odor.

**Warning Statements:** Keep out of reach of children. DANGER. Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Avoid eye contact with skin. Avoid inhaling vapor or spray mist.

#### **Potential Health Effects:**

**Likely Routes of Exposure:** Inhalation, eye and skin contact.

**Eye Contact:** Causes irreversible eye damage. Vapors and mist can cause irritation.

**Skin Contact:** Slightly toxic and slightly irritating based on toxicity studies. Overexposure by skin absorption may cause symptoms similar to those for ingestion.

**Ingestion:** Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

**Inhalation:** Low inhalation toxicity. Overexposure may cause upper respiratory tract infection and symptoms similar to those from ingestion.

**Medical Conditions Aggravated by Exposure:** Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

See section 11: TOXICOLOGICAL INFORMATION for more information.

#### **Potential Environmental Effects:**

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants.

See section 12: ECOLOGICAL INFORMATION for more information.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

Component	CAS Number	% By Weight
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	47.3
Other Ingredients		52.7

### 4. FIRST AID MEASURES:

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

**If Swallowed:** Call a poison control center or doctor for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If on Skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

**If Inhaled:** Move person to fresh air. If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

### 5. FIRE FIGHTING MEASURES:

**Flash Point:** Not applicable due to aqueous formulation

**Autoignition Temperature:** Not determined

**Flammability Limits:** Not Determined

**Extinguishing Media:** Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

**Unusual Fire and Explosion Hazards:** If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

**Hazardous Decomposition Materials (Under Fire Conditions):** May produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

### National Fire Protection Association (NFPA) Hazard Rating: Rating for this product:

**Health: 2      Flammability: 1      Reactivity: 0**

Hazards Scale: 0 = Minimal      1 = Slight

2 = Moderate      3 = Serious      4 = Severe

### 6. ACCIDENTAL RELEASE MEASURES:

**Personal Precautions:** Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Environmental Precautions:** Prevent Material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

**Methods for Containment:** Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

**Methods for Cleanup and Disposal:** Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

**Other Information:** Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

### 7. HANDLING AND STORAGE:

#### Handling:

Do not get in eyes or on clothing. Avoid contact with skin. Avoid inhaling vapor or spray mist. Users should wash hands, face and arms with soap and water, before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

If the container is over one gallon and less than five gallons, then persons engaged in open pouring of the product must also wear coveralls or a chemical-resistant apron. If the container is five gallons or more in capacity, do not open and pour product from the container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

### Storage:

Always store pesticides in a secured warehouse or storage building. Store at temperatures above 32°F. If allowed to freeze, rewarm to 40°F. Remix thoroughly before using. This does not alter this product. Containers should be opened in well-ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed, or other pesticides. Do not contaminate water, food or feed by storage or disposal.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

### Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

### Personal Protective Equipment:

**Eye/Face Protection:** To avoid contact with eyes, wear face shield, goggles or safety glasses with front, brow and temple protection. An emergency eyewash or water supply should be readily accessible to the work area.

**Skin Protection:** To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves. When open pouring the product, also wear coveralls or a chemical-resistant apron. An emergency shower or water supply should be readily accessible to the work area.

**Respiratory Protection:** Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

**General Hygiene Considerations:** Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

### Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
DMA Salt of 2,4-D	10*	NE	10*	NE	mg/m <sup>3</sup>

\* Based on adopted limit for 2,4-D      NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

**Appearance and Odor:** Clear, pale yellow liquid with a phenolic-amine odor.

**Boiling Point:** Not determined

**Density:** 9.65 pounds/gallon

**Evaporation Rate:** Not determined

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

**Freezing Point:** 32°F (0°C)  
**pH:** 8.3 – 8.7  
**Solubility in Water:** Soluble  
**Specific Gravity:** 1.158 @ 20°C  
**Vapor Density:** Not determined  
**Vapor Pressure:** Not determined  
**Viscosity:** Not determined

**Note:** Physical data are typical values, but may vary from ample to sample. A typical value should not be constructed as a guaranteed analysis or as a specification.

### 10. STABILITY AND REACTIVITY:

**Chemical Stability:** This material is stable under normal handling and storage conditions.

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame.

**Incompatible Materials:** Strong oxidizing agents: bases and acids.

**Hazardous Decomposition Products:** Under fire conditions may produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

**Hazardous Reactions:** Hazardous polymerization will not occur.

### 11. TOXICOLOGICAL INFORMATION:

#### Toxicological Data:

Except as noted, data from laboratory studies conducted on a similar, but not identical, formulation:

**Oral:** Rat LD<sub>50</sub>: 1,161 mg/kg

**Dermal:** Rat LD<sub>50</sub>: >5,000 mg/kg (data on this product)

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >3.5 mg/l

**Eye Irritation:** Rabbits: Severely irritating/corrosive (data on this product)

**Skin Irritation:** Rabbits: Slightly irritating (data on this product)

**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**Subchronic (Target Organ) Effects:** Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

**Carcinogenicity / Chronic Health Effects:** Prolonged overexposure can cause liver, kidney and muscle damage. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic potential. The U.S. EPA has given 2,4-D a Class D classification (not classifiable as to human carcinogenicity).

**Reproductive Toxicity:** No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animal studies.

**Developmental Toxicity:** Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

**Genotoxicity:** There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic.

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

### Assessment Carcinogenicity:

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Regulatory Agency Listing As Carcinogen				
Component	ACGI H	IAR C	NT P	OSH A
Chlorophenoxy Herbicides	No	2B	No	No

See Section 2: HAZARDS IDENTIFICATION for more information.

### 12. ECOLOGICAL INFORMATION:

#### Ecotoxicity:

Data on 2,4-D, Dimethylamine Salt:

96-hour LC <sub>50</sub> Bluegill:	524 mg/l
96-hour LC <sub>50</sub> Rainbow Trout	250 mg/l
48-hour EC <sub>50</sub> Daphnia:	184 mg/l
Bobwhite Quail Oral LD <sub>50</sub> :	500 mg/kg
Mallard Duck 8-day Dietary LC <sub>50</sub> :	>5,620 ppm

#### Environmental Fate:

In a laboratory and field studies, 2,4-D DMA salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks.

### 13. DISPOSAL CONSIDERATIONS:

#### Waste Disposal Method:

Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

#### Container Handling and Disposal:

Triple rinse (or equivalent), adding rinsate to spray tank. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

### 14. TRANSPORT INFORMATION:

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

#### DOT

##### ≤ 21 gallons per completed package

Non Regulated – See 49 CFR 173.132(b)(3) & 172.101  
Appendix A

##### > 21 gallons per completed package

RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S. (2,4 DICHLOROPHENOXYACETIC

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

ACID), 9, UN 3082, III

See 49 CFR 172.101 Appendix A

### IMDG

Non Regulated – See IMDG 2.6.2.1.3

### IATA

Non Regulated – See IATA 3.6.1.5.3

## 15. REGULATORY INFORMATION:

### U.S. Federal Regulations:

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

### SARA Hazard Notification/Reporting:

**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Immediate, Delayed

### Section 313 Toxic Chemical(s):

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7),  
39.3% equivalent by weight in product

### Reportable Quantity (RQ) under U.S. CERCLA:

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7)  
100 pounds

### RCRA Waste Code:

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7)  
U240

### State Information:

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** Not Listed

## 16. OTHER INFORMATION:

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED 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-accepted label.

# MATERIAL SAFETY DATA SHEET



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call: 1-877-325-1840

Voluntary Purchasing Groups, Inc.  
230 FM 87  
Bonham, Texas 75418

## Hi-Yield® 2, 4-D Amine No. 4

Effective Date: October 17, 2008

---

Although information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date here of, Voluntary Purchasing Groups, Inc. 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 purposed prior to use. In not event will Voluntary Purchasing Groups, Inc. 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.

Hi-Yield is a registered trademark of Voluntary Purchasing Groups, Inc.