

# MATERIAL SAFETY DATA SHEET

## AMMO® 2.5 EC INSECTICIDE



MSDS Ref. No: 52315-07-8-2a  
 Version: Global  
 Date Approved: 01/11/2002  
 Revision No: 3

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 91/155/EEC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** AMMO® 2.5 EC INSECTICIDE

**PRODUCT CODE:** 537a

**ACTIVE INGREDIENT:** Cypermethrin

**CHEMICAL FAMILY:** Pyrethroid Pesticide

**MOLECULAR FORMULA:** C<sub>22</sub>H<sub>19</sub>Cl<sub>2</sub>NO<sub>3</sub> (cypermethrin)

**SYNONYMS:** FMC 30980; (+/-)-a-cyano(3-phenoxyphenyl)methyl (+/-) cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (RS)-a-cyano-3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-1,1-dimethylcyclopropanecarboxylate

### MANUFACTURER

UNITED AGRI PRODUCTS, INC.  
 P.O. Box 667  
 Greenley, CO 80632

### Emergency Telephone Numbers:

**Emergency Phone** (800) 424-9300

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>	<u>PEL/TLV</u>	<u>EC No.</u>	<u>EC Class</u>
Cypermethrin	52315-07-8	30.6	None	None	None
Aromatic Hydrocarbons	64742-95-6	<18	100 ppm (supplier)	650-001-00-0	R65
1,2,4-trimethylbenzene	95-63-6	<9.6	25 ppm	None	None
Surfactant Blend	0000-00-0	<6.3	None	None	None
Xylene	1330-20-7	<0.9	100 ppm 150 ppm STEL	601-022-00-9	R11-20/21-38
Ethylbenzene	100-41-4	<0.03	100 ppm 100 ppm 125 ppm	601-023-00-4	R11/20
1-butanol	71-36-3	<0.7	50 ppm (skin) (ceiling)	603-004-00-6	R10-20

Cumene 98-82-8 <0.5 50 ppm 601-024-00-X R10-37  
(skin) 50  
ppm

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### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**IMMEDIATE CONCERNS:** - Amber liquid with an aromatic solvent odor.  
- Moderately combustible. May support combustion if heated above the product's flash point (see Section 5, "Fire Fighting Measures" below).  
- Thermal decomposition and burning may form toxic by-products.  
- For large exposures or fire, wear personal protective equipment.  
- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.  
- Moderately toxic if swallowed.

**POTENTIAL HEALTH EFFECTS:** Effects from overexposure result from either swallowing, or coming into contact with the skin or eyes. Symptoms of overexposure include lethargy, continuous muscle contractions, convulsions, incoordination, tearing eyes, and hair loss. Contact with this product may produce skin sensations such as numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.

**MEDICAL CONDITIONS AGGRAVATED:** None presently known.

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### 4. FIRST AID MEASURES

**EYES:** Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

**SKIN:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

**INGESTION:** Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

**INHALATION:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

**NOTES TO MEDICAL DOCTOR:** This product has moderate oral, and low dermal and inhalation toxicity. It is expected to be mildly irritating to the eyes and skin. Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Do not administer milk, cream or other substances which contain vegetable or animal fats, as they enhance absorption. Central nervous system stimulation should be controlled with sedation by, e.g., barbiturates. Contains aromatic hydrocarbons that may produce a severe pneumonitis if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

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### 5. FIRE FIGHTING MEASURES

**FLASH POINT AND METHOD:** 41°C (106°F) (CC)

**EXTINGUISHING MEDIA:** Foam, CO2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

**FIRE / EXPLOSION HAZARDS:** Moderately combustible. When heated above

the flash point, this material releases vapors which, when mixed with air, can burn or be explosive.

**FIRE FIGHTING PROCEDURES:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Heat and fire may result in thermal decomposition and the release of carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

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## 6. ACCIDENTAL RELEASE MEASURES

**RELEASE NOTES:** Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excess liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

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## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** For splash, mist or spray exposure, wear chemical protective goggles or a face shield.

**RESPIRATORY:** For splash, mist or spray exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

**PROTECTIVE CLOTHING:** Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

**WORK HYGIENIC PRACTICES:** Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

**GLOVES:**

Wear chemical protective gloves made of materials such as nitrile, neoprene or Viton® brand. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

**COMMENTS:** Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** Aromatic solvent

**APPEARANCE:** Amber liquid

**SOLUBILITY IN WATER:** Emulsifies

**SPECIFIC GRAVITY:** 0.975 (water = 1)

**MOLECULAR WEIGHT:** 416.3 (cypermethrin)

**WEIGHT PER VOLUME:** 8.12 lb/gal. (975 g/L)

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## 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** Excessive heat and fire.

**STABILITY:** Stable

**POLYMERIZATION:** Will not occur

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## 11. TOXICOLOGICAL INFORMATION

**DERMAL LD<sub>50</sub>:** >2000 mg/kg (rabbit)

**ORAL LD<sub>50</sub>:** 137 mg/kg (rat)

**INHALATION LC<sub>50</sub>:** 2.18 mg/L/4 hr (rat)

**SENSITIZATION:** This product produces skin sensitization (allergic reaction) in laboratory animals, and may produce similar effects in humans.

**ACUTE EFFECTS FROM OVEREXPOSURE:** This product has moderate oral, and low dermal and inhalation toxicity. It is expected to be mildly irritating to the eyes and skin. Signs of toxicity in laboratory animals included hypertonicity, ataxia, lethargy, convulsions, gasping, salivation, dyspnea, and alopecia. Experience to date indicates that contact with this product may produce skin sensations such as numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs which may result in fatal pulmonary edema. Exposure to butanol vapors may produce headaches, drowsiness and irritation of the nose and throat. Excessive exposures to butanol liquid or vapors may result in contact dermatitis and irritation of the mucous membranes.

**CHRONIC EFFECTS FROM OVEREXPOSURE:** No data available for the

formulation. In studies with laboratory animals, cypermethrin did not cause reproductive toxicity, teratogenicity, neurotoxicity or carcinogenicity in male and female rats and male mice. Cypermethrin caused an increase in benign lung tumors in female mice at 1600 ppm in the diet. The EPA concluded on a weight of evidence approach that cypermethrin represents a low oncogenic potential to female mice at this dose level (approximately 228 mg/kg/day). Liver enlargement is often noted in laboratory animals that have ingested large doses of cypermethrin during their life span. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage. Inhalation of xylene vapors at high doses has also resulted in an increased incidence of malformations and decreases in fetal weight in laboratory animals. Damage from xylene may be potentiated by alcohol. Disturbances in hearing and balance have been reported in workers exposed to butanol vapors. Under the conditions of 2-year inhalation studies, conducted by the National Toxicology Program (NTP), there was clear evidence of carcinogenic activity of ethylbenzene in male rats based on increased incidences of renal tubule neoplasms. The incidences of testicular adenoma were also increased. There was some evidence of carcinogenic activity in female rats based on increased incidences of renal tubule adenomas. There was some evidence of carcinogenic activity in male mice based on increased incidences of alveolar/bronchiolar neoplasm. There was some evidence of carcinogenic activity in female mice based on increased incidences of hepatocellular neoplasms. Studies conducted by the International Agency for Research on Cancer (IARC) showed that there is inadequate evidence in humans for the carcinogenicity of ethylbenzene and that there is sufficient evidence in experimental animals for the carcinogenicity of ethylbenzene; therefore, the overall evaluation shows that ethylbenzene is possibly carcinogenic to humans (Group 2B).

<u>Chemical Name</u>	<u>NTP Status</u>	<u>IARC Status</u>	<u>OSHA Status</u>	<u>Other</u>
Ethylbenzene	Listed	Listed	Not listed	Not listed (ACGIH)

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## 12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient.

**ENVIRONMENTAL DATA:** Cypermethrin is rapidly degraded in soil with a half-life of 2 to 4 weeks. It is readily hydrolyzed under basic conditions (pH = 9) but, under acidic and neutral conditions, hydrolysis half-life can be 20 to 29 days. Cypermethrin has a high affinity for organic matter and a Log Pow of 5.0; yet, because of the ease with which the material undergoes degradation, it has a very low potential for bioconcentration (BCF = 17), and is not mobile in soil.

**ECOTOXICOLOGICAL INFORMATION:** Cypermethrin is considered highly toxic to fish and aquatic arthropods, and has LC50 values which range from 0.004 µg/L to 3.6 µg/L. The aquatic arthropods tended to be some of the more sensitive species. Care should be taken to avoid contamination of the aquatic environment. Cypermethrin is slightly toxic to birds and oral LD50 values are greater than 10,248 mg/kg.

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## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

**EMPTY CONTAINER:** Non-returnable containers which held this material should be cleaned, prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated. Do not cut

or weld metal containers. Vapors that form may create an explosion hazard.

## 14. TRANSPORT INFORMATION

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

**PROPER SHIPPING NAME:** Pyrethroid pesticide, liquid, toxic, flammable

**TECHNICAL NAME:** Cypermethrin

**PRIMARY HAZARD CLASS/DIVISION:** 6.1

**UN/NA NUMBER:** UN3351

**PACKING GROUP:** III

**REPORTABLE QUANTITY (RQ):** None

**U.S. SURFACE FREIGHT CLASS:** Insecticides, NOI, Poison other than Class A Poison. NMFC Item 102100.

**MARINE POLLUTANT #1:** cypermethrin (Severe Marine Pollutant)

**NAERG:** 131

## 15. REGULATORY INFORMATION

### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):** Not listed

**SECTION 311 HAZARD CATEGORIES (40 CFR 370):** Immediate, Delayed, Fire

**SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):** The threshold planning quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs. This product contains the following ingredients with a TPQ of less than 10,000 lbs.: None

**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):** This product contains the following ingredients subject to Section 313 reporting requirements: (1,2,4-trimethylbenzene) (xylene, mixed isomers)

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT):** Listed.

<u>Chemical Name</u>	<u>Wt.%</u>	<u>RQ</u>
Xylene	<0.9	100 lbs.
Ethylbenzene	<0.03	1000 lbs.
1-butanol	<0.7	5000 lbs.
Cumene	<0.5	5000 lbs.

**COMMENTS:** Australian Hazard Code : 3XE

U.S. EPA Signal Word : CAUTION

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## 16. OTHER INFORMATION

### REVISION SUMMARY

This MSDS replaces Revision #2, dated December 11, 2001. Changes in information are as follows:

Section 11 (Toxicological Information)

Viton - E.I. du Pont de Nemours and Co. Trademark;  
Ammo - FMC Trademark