

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: AGRI STAR 2,4-D ESTER 700
Product Use: Herbicide.
PCP Registration: 29979

Supplier's name and address:
Albaugh, Inc.
1525 NE 36th St.
Ankeny, IA 50021 USA

Emergency Telephone #: 1-(613) 996-6666 (CANUTEC) or 1-800-424-9300 (CHEMTREC)

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No.	Percentages (%)	ACGIH TLV (mg/m ³)	OSHA PEL (mg/m ³)
*2,4-D Ethylhexyl Ester	1928-43-4	92 - 97%	10	N.D.
Inert Ingredients including hydrocarbon solvents	64742-47-8	3 - 8%	N.D.	N.D.

*Note: The product contains about 660 grams a.e./L of the active ingredient 2,4-D acid (CAS # 94-75-7).

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- Clear, dark red liquid with slight aromatic and phenolic odor.
- Harmful if swallowed or absorbed through skin. Moderately irritating to the eyes. Causes skin irritation. DO NOT get in eyes, on skin, or on clothing. Potential skin sensitizer.
- Dangerous for the environment. Toxic to flora (plants). May be harmful to aquatic organisms.

POTENTIAL HEALTH EFFECTS

Target Organs: Eyes, skin, respiratory system, digestive system.

Signs and symptoms of short-term (acute) exposure:

Inhalation: Inhalation may cause irritation to the nose, throat and upper respiratory tract. Symptoms may include coughing and sneezing

Skin Contact: Direct skin contact may cause slight irritation.

Eye Contact: Direct eye contact may cause severe irritation and reversible eye injury. Symptoms may include pain, redness and tearing.

Ingestion: This product is not expected to be harmful by oral administration route. Ingestion of large amounts could cause irritation. Symptoms may include nausea, vomiting and diarrhea.

Potential Environmental Effects: This product is a herbicide and potentially toxic to all green plants. The product is harmful to fish, aquatic invertebrates and aquatic plants. See ECOLOGICAL INFORMATION (Section 12).

SECTION 4 — FIRST AID MEASURES

If Swallowed: Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

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

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

Take the container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

Note to Physician: No specific antidote. Treatment should be based on judgement of the physician in response to reactions of the patient. Contains petroleum distillates at greater than 10%. DO NOT induce vomiting. Vomiting may cause aspiration pneumonia. Treat symptomatically.

SECTION 5 — FIRE FIGHTING MEASURES

Flash Point: 84 C

Conditions of Flammability: Combustible mixture. When heated above the flash point, this material emits vapors which, when mixed with air, can burn or be explosive. Heavier than air vapors may travel to an ignition source.

Autoignition Temperature: Not established

Flammable Limits: Not established

Extinguishing Media: Water spray, Foam, Carbon dioxide, Dry chemical.

Fire Fighting Instructions: Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water run off.

Fire Fighting Equipment: Self-contained breathing apparatus with full facepiece and protective clothing.

Hazardous Combustion Products: Hydrogen chloride, Oxides of nitrogen and carbon.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Spill Response/Cleanup: Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk.

Small Spill: Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.

Large Spill: Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, and scrape up for disposal.

SECTION 7 — HANDLING AND STORAGE

Safe Handling Procedures: This material is a combustible and harmful liquid. Wear appropriate protective equipment during handling. Use only in well ventilated area. Avoid contact with eyes, skin and clothing. Do not inhale vapors or mists. Keep away from all unprotected persons and children. Do not use near sources of heat, flame or ignition sources. Use caution when opening containers. Keep container tightly closed when not in use. Wash thoroughly after handling.

Storage Recommendations: Store in a cool, dry, well ventilated area away from incompatibles. Protect container from physical damage. No smoking in the area. Inspect containers periodically for damage or leaks.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and Engineering Controls: If handled indoors, general room ventilation may not be sufficient. Provide mechanical exhaust ventilation to keep concentrations below specified TLV's and PEL's.

Respiratory protection: In the event of an accidental discharge of the material during manufacturing or handling, which produces a heavy vapor or mist, workers should put on respiratory protection. Wear respirators approved by MSHA/NIOSH.

Protective Gloves: Wear chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton.

Eye Protection: Wear face shield chemical splash goggles to prevent vapors or mists from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Clothing: Wear long sleeved shirt, long pants, socks and shoes as a minimum protective clothing to prevent skin contact.

Other protective equipment: An eyewash station and safety shower, may be required depending on exposure and on workplace standards.

General hygiene considerations: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

Re-entry is not permitted until 12 hours after application for all agricultural scenarios.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance:	Clear dark red liquid.
Odor:	Slight aromatic and phenolic.
Specific gravity (water = 1):	1.11 to 1.15 g/cm ³ @ 68°F/20°C.
Solubility in water:	Emulsifies.
pH:	4.0 – 4.5 (1% aqueous solution)
Boiling point:	Unknown
Freezing point:	< 32°F / 0°C.
Vapour density (Air=1.0):	Unknown
Percent Volatile by Weight:	Unknown
Evaporation rate (n-BuAc=1.0):	Unknown
Vapour pressure:	Unknown

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and Reactivity:	This product is stable at ambient temperatures.
Hazardous Polymerization:	Hazardous polymerization will not occur.
Conditions to Avoid:	Avoid excessive heat and flame.
Materials to Avoid (incompatibles):	Acidic, basic and oxidizing agents
Hazardous Decomposition Products:	Refer to 'Hazardous combustion products' Section.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of Exposure:	Eye contact, Skin absorption, Inhalation and Oral ingestion.
Acute Toxicity:	
Oral LD ₅₀ (rat)	> 750 mg/Kg
Dermal LD ₅₀ (rat)	> 2,000 mg/Kg
Inhalation LC ₅₀ (rat)	> 2.5 mg/L
Eye Irritation (rabbit)	Slight to moderate
Skin Irritation (rabbit)	Moderate
Sensitization (guinea pig)	Potential sensitizer
Chronic/Carcinogenicity:	IARC – 2B (chlorophenoxy herbicides)
Reproductive Toxicity:	Animal studies have noted testicular effects and lower male fertility..
Developmental Toxicity:	Animal studies have noted decreased fetal body weights at doses toxic to mother animals.
Genotoxicity:	Mixed results in animal studies but weight of evidence indicate that MCPA is not mutagenic.

SECTION 12 — ECOLOGICAL INFORMATION

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment. This product is also toxic to non-terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE of product label.

Ecotoxicological information (Acid technical):

Fish -

96-Hr LC₅₀, Rainbow trout - 250 mg/L

96-Hr LC₅₀, Bluegill sunfish - 524 mg/L

Invertebrates -

48-Hr EC₅₀, Daphnids – > 5.0 mg/L.

Avian -

Oral LD₅₀, Quail - 500 mg/kg

Oral Dietary LC₅₀, Mallard Duck - >5,500 ppm.

SECTION 13 — DISPOSAL CONSIDERATIONS

Methods of Disposal: Pesticide wastes are toxic. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Disposal must be in compliance with all Federal, State and local regulations. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency.

Container Disposal: Emptied containers may retain harmful vapors or residue.

For Recyclable Containers: Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or

municipality for the location of the nearest collection site. Before taking the container to the collection site triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank. Make the empty, rinsed container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

For Returnable-Refillable Containers: For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

SECTION 14 — TRANSPORTATION INFORMATION

US 49 CFR information: Not regulated for transport.

Canadian Transportation of Dangerous Goods Clear Language (CLR) information: Not regulated for transport.

USA DOT SHIPPING DESCRIPTION: Not regulated by DOT, ICAO/IATA or IMDG Code

CANADIAN TDG DESCRIPTION (Road & Rail) Not Regulated

SECTION 15 — REGULATORY INFORMATION

WHMIS HAZARD CLASS: B3 Combustible Liquid, D2B Toxic Material
WHMIS TRADE SECRET: Exempt (Regulated under the Pest Control Products Act)
CANADIAN INVENTORY: Exempt from CEPA.

SECTION 16 — OTHER INFORMATION

HMIS HAZARD RATINGS	HEALTH	2
	FLAMMABILITY	1
	PHYSICAL HAZARD	1
	4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

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Legend:

ACGIH - American Conference of
Governmental Industrial Hygienists CAS - Chemical Abstract Service
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act of 1980
EPA - Environmental Protection Agency
HMIS - Hazardous Materials Identification System
IARC - International Agency for Research on Cancer
OEHHA - Office of Environmental Health Hazard Assessment
OSHA - Occupational Safety and Health Act
PEL - Permissible Exposure Limit
PMCC - Pensky Martins Closed Cup
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
WHMIS - Workplace Hazardous Materials Information System

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