

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY ADDRESS: ALBAUGH, LLC
Ankeny, IA 50021

EMERGENCY TELEPHONE NUMBERS:
(800) 424-9300 (CHEMTREC, transportation and spills)

PRODUCT NAME : FIVE STAR
CHEMICAL NAME : 2,4-D ethylhexyl ester
PRODUCT USE : Herbicide
PRODUCT CODE : EPA Reg. No. 42750-49

SECTION 2 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

Liquid

HEALTH HAZARDS: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation.

PHYSICAL HAZARDS: May release toxic fumes if burned.

ENVIRONMENTAL HAZARDS: 2,4-D ester is toxic to some aquatic organisms.



SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	PERCENTAGE	CAS NUMBER
2-Ethylhexyl ester of 2,4-D Acid	81.8 %	1928-43-4
Petroleum distillate	8.4%	64742-47-8
Inert Ingredients	9.8%	N/A

SECTION 4 - FIRST AID MEASURES

First Aid responders should use protective equipment in Section 8 if there is a potential for exposure to product.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have 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 OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye 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 eye. 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.

NOTE TO PHYSICIAN: May cause chemical pneumonitis if aspirated. If lavage is performed, suggest endotracheal and/or esophagosopic control.

Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5 - FIRE FIGHTING MEASURES

National Fire Protection Rating (NFPA)

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0
4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

FLASHPOINT: > 200°F (96°C)

EXTINGUISHING MEDIA: Water spray, Foam

FIRE AND EXPLOSION HAZARD: May decompose in fire, releasing irritating and toxic gases.

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 runoff.

Minimize use of water to prevent environmental contamination. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal.

FIRE FIGHTING EQUIPMENT: Self-contained breathing apparatus with full facepiece and protective clothing.

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen chloride, Oxides of nitrogen,

SECTION 6 - ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILLS OR LEAKS: Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

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.

Minimize use of water to prevent environmental contamination

SECTION 7 - HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN!

Wear proper safety equipment specified in Section 8 when mixing, loading or otherwise handling concentrate.

HANDLING: Use only in a well-ventilated area. Do not reuse this container. Wear proper safety equipment.

STORAGE: Keep container closed when not in use. Keep away from food, feed and drinking water. Store away from heat (> 100 F) and keep from freezing (< 35 F).

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**EXPOSURE LIMITS (8 hour TWA, ppm):**

COMPONENT	OSHA PEL	ACIGH TLV
2,4-D ethylhexyl ester	10 (as acid)	10 (as acid)
Petroleum distillate	100 ppm	100 ppm

ENGINEERING CONTROLS: Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION - Safety goggles or full face respirator if vapors cause eye discomfort.

CLOTHING – Long-sleeved shirt and long pants, Shoes plus socks. Chemical resistant apron if mixing/loading or cleaning equipment.

GLOVES – Chemical resistant gloves made of any waterproof material.

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.

USER SAFETY RECOMMENDATIONS: (use label text)

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 outside of gloves before removing. As soon as possible wash thoroughly and change into clean clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Odor:	No data
pH:	3.0 – 4.0
Melting Point:	Not applicable
Boiling Point:	No data
Flash Point:	> 200°F (96°C)
Evaporation Rate:	No data
Flammability:	No data
Flammability Limits:	No data
Vapor Pressure:	1.86×10^{-2} mPa (25°C) (2,4-D acid)
Vapor Density:	Not applicable
Density:	1.07 – 1.11 g/ml (8.93 – 9.26 lb/gal)*
Solubility:	Emulsifies
Partition Coefficient:	log Pow = 2.58 – 2.83 (pH 1), 0.04 – 0.33 (pH 5), -0.75 (pH 7) (2,4-D Acid)
Auto-Ignition Temperature:	No data
Decomposition Temperature:	No data
Viscosity:	23.1 cSt (23°C)

*Listed density is an approximate value and does not necessarily represent that of a specific batch.

SECTION 10 - STABILITY AND REACTIVITY

PRODUCT REACTIVITY: None known

CHEMICAL STABILITY: Stable under normal conditions.

HAZARDOUS REACTION/POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Avoid excessive heat.

INCOMPATIBLE MATERIALS: Oxidizing agents and acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may release toxic gases such as hydrogen chloride, oxides of nitrogen and carbon.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute toxicity values from a similar but not identical formulation.

ACUTE TOXICITY:

Oral LD ₅₀ (rat)	- 1,250 mg/kg
Dermal LD ₅₀ (rat)	- > 2,000 mg/kg
Inhalation LC ₅₀ (rat)	- > 4.0 mg/L
Eye Irritation (rabbit)	- Mild irritant
Skin Irritation (rabbit)	- Mild irritant
Sensitization (guinea pig)	- Potential sensitizer

CARCINOGEN STATUS:

OSHA	- Not listed
NTP	- Not listed
IARC	- 2B (limited evidence if carcinogenicity in humans)

TERATOGENICITY: Studies have shown decreased fetal body weights and delayed development in offspring at maternally toxic doses.

MUTAGENICITY: Not known to be mutagenic

SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: This pesticide may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate. Apply this product only as directed on label.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Refer to the container label for complete environmental precautions.

FATE: 2,4-D Ethylhexyl Ester rapidly de-esterifies to the parent acid in the environment. Typical half-life of the 2,4-D acid is from a few days to a few weeks.

FISH TOXICITY: (Acid Technical)

96 hour LC₅₀, Bluegill – 524 mg/L
 96 hour LC₅₀, Rainbow trout – 250 mg/L

AVIAN TOXICITY: (Acid Technical)

Oral LD₅₀, Quail – 500 mg/Kg
 Oral Dietary LC₅₀, Mallard Duck - > 5,500 ppm

BEE TOXICITY: (technical) - Unknown

SECTION 13 - DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by storage or disposal.

WASTES: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, 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: Non-refillable containers: Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler. If the container cannot be refilled, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refer to the container label to determine if it is refillable and for complete cleaning and disposal instructions.

SECTION 14 - TRANSPORT INFORMATION**SHIPPING DESCRIPTION:**

(Ground transport)

Containers < 20 gallons – Not regulated by DOT

Containers ≥ 20 gallons – UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, RQ (2,4-D ester)

TRANSPORT HAZARD CLASS: Class 9

UN NUMBER: 3082

DOT PACKING GROUP: PG III

SECTION 15 - REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY: 100 lbs 2,4-D acid (approximately 20 gallons of Five Star)

SARA TITLE III STATUS:

311/312 Hazard Categories - Immediate & Delayed Health
 313 Toxic Chemicals – Ethylhexyl ester of 2,4-D

CALIFORNIA PROP 65: Not listed

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

SECTION 16 - OTHER INFORMATION

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

DISCLAIMER: The information presented herein is based on available data from reliable sources and is correct to the best of Albaugh's knowledge. Albaugh makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS 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.

REVISED DATE: August, 2018

REFERENCE: Revised Section 5 & 9 flash point values