

**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 :** CROSSROAD

**CHEMICAL NAME :** Triclopyr butoxyethyl ester and 2,4-D butoxyethyl ester

**PRODUCT USE :** Herbicide

**PRODUCT CODE :** EPA Reg. No 42750-124

**SECTION 2 - HAZARDS IDENTIFICATION SUMMARY**

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

Clear brown liquid

**HEALTH HAZARDS:** Moderate eye irritant.**PHYSICAL HAZARDS:** Combustible. May release toxic fumes if burned.**ENVIRONMENTAL HAZARDS:** Triclopyr and 2,4-D are toxic to certain terrestrial plant and aquatic organisms. Triclopyr and 2,4-D are moderately persistent and mobile in certain soil types.**SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS**

COMPONENT	PERCENTAGE	CAS NUMBER
Triclopyr Butoxy Ethyl Ester	16.0-17.0	64700-56-7
2,4-D Butoxy Ethyl Ester	34.0-35.0	1929-73-3
Petroleum distillates*	< 40.0 %	64742-94-5
*Naphthalene	5.0-6.0	91-20-3

**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:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.**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.**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 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.**NOTE TO PHYSICIAN:** This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.

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

**FLASHPOINT:** 142 F (60.7 °C)**EXTINGUISHING MEDIA:** Use foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material.**FIRE AND EXPLOSION HAZARD:** May decompose in fire due to thermal decomposition, 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, Chlorinated pyridine, Phosgene.**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. After removal, clean contaminated area thoroughly with water. Pick up wash liquid with additional absorbent and place in a disposable container. 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. Wear appropriate safety equipment when handling.**STORAGE:** Store in original container with lid tightly closed. Keep away from food, feed and drinking water. Combustible liquid, store in a well ventilated, dry place away from heat and other sources of ignition.

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

COMPONENT	OSHA PEL	ACIGH TLV
Triclopyr Butoxy Ethyl Ester	Not listed	Not listed
2,4-D Butoxy Ethyl Ester	10 ppm (as acid)	10 ppm (as acid)
Naphthalene	10 ppm	10 ppm TWA 15 ppm ST

**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.

**GLOVES** – Chemical resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC) or viton.

**RESPIRATOR** - When handling where exposure limits may be exceeded, use a respirator approved for pesticides.

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/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS:**

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**

<b>Appearance:</b>	Clear brown liquid
<b>Odor:</b>	Paint like odor
<b>pH:</b>	3.1 – 4.1
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	60.7 °C
<b>Evaporation Rate:</b>	No data
<b>Flammability:</b>	No data
<b>Flammability Limits:</b>	No data
<b>Vapor Pressure:</b>	0.2 mPa (25°C) (Triclopyr Acid) 1.86 x 10 <sup>-2</sup> mPa (25°C) (2,4-D Acid)
<b>Vapor Density:</b>	Not applicable
<b>Density:</b>	1.10 – 1.13 g/ml (9.2 – 9.4 lb/gl)*
<b>Solubility:</b>	Emulsifies
<b>Partition Coefficient:</b>	log Pow = 0.42 (pH 5), -0.45 (pH7), -0.96 (pH 9) (Triclopyr Acid) log Pow = 2.58 – 2.83 (pH 1), 0.04 – 0.33 (pH 5), -0.75 (pH 7) (2,4-D Acid)
<b>Auto-Ignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	8.8 cSt (20°C); 4.7 cSt (40°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, however may decompose if heated.

**HAZARDOUS REACTION/POLYMERIZATION:** Product will not undergo polymerization.

**CONDITIONS TO AVOID:** Avoid temperatures above (105°F, 40°C) and below 40°F (6°C).

**INCOMPATIBLE MATERIALS:** Strong acids and oxidizing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:** May decompose to hydrogen chloride, oxides of nitrogen and phosgene when burning.

**SECTION 11 - TOXICOLOGICAL INFORMATION**

Acute toxicity values from a similar but not identical formulation.

**ACUTE TOXICITY:**

Oral LD <sub>50</sub> (rat)	- 1,000 mg/kg
Dermal LD <sub>50</sub> (rat)	- > 5,000 mg/kg
Inhalation LC <sub>50</sub> (rat)	- > 4.1 mg/L
Eye Irritation (rabbit)	- Moderate irritant
Skin Irritation (rabbit)	- Slight irritant
Sensitization (guinea pig)	- Potential sensitizer

**CARCINOGEN STATUS:**

OSHA	- Not listed
NTP	- Not listed
IARC (2,4-D)	- 2B (limited evidence if carcinogenicity in humans)

OSHA	- Not listed
NTP	- Naphthalene
IARC	- Naphthalene: 2B. 2,4-D: 2B

**TERATOGENICITY:** Evidence of birth defects and reproductive effects only at maternally toxic doses.

**MUTAGENICITY:** Little evidence of mutagenic effects during in vivo or in vitro studies.

**SECTION 12 - ECOLOGICAL INFORMATION**

**ENVIRONMENTAL SUMMARY:** This pesticide is 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.

2,4-D and Triclopyr have properties and characteristics associated with chemicals detected in groundwater. The use of these chemicals 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.

Mixing and Loading: Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an

impervious pad to contain spills will help prevent groundwater contamination.

**FATE:** Triclopyr BEE ester rapidly hydrolyzes to the parent acid. Triclopyr acid is moderately persistent with a soil half life of 2 to 6 weeks depending on soil type and weather conditions. Triclopyr acid is water soluble and mobile in soil. 2,4-D BEE 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 depending on soil type and weather conditions.

**FISH TOXICITY: (BEE ester formulation)**

96 hour LC<sub>50</sub>, Rainbow trout – 1.3 ppm  
96 hour LC<sub>50</sub>, Bluegill - 1.5 ppm

**FISH TOXICITY: (2,4-D Acid)**

96 hour LC<sub>50</sub>, Bluegill – 524 mg/L  
96 hour LC<sub>50</sub>, Rainbow trout – 250 mg/L

**AVIAN TOXICITY: (BEE ester formulation)**

Dietary LC<sub>50</sub>, Bobwhite quail – >9,000 ppm  
Dietary LC<sub>50</sub>, Mallard duck – >10,000 ppm

**AVIAN TOXICITY: (2,4-D Acid)**

Oral LD<sub>50</sub>, Quail – 500 mg/Kg  
Oral Dietary LC<sub>50</sub>, Mallard Duck - > 5,500 ppm

**BEE TOXICITY: (triclopyr acid) – > 100 ug/bee**

**BEE TOXICITY: (2,4-D Acid) - 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. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances. **Refillable container:** 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 refiller.

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 < 34 gallons –

Not regulated by DOT

Containers ≥ 34 gallons –

NA1993, Combustible Liquid, N.O.S., (contains petroleum solvent), PG III, RQ (2,4-D Ester)

**TRANSPORT HAZARD CLASS:**

Combustible Liquid

**UN NUMBER:**

NA1993

**DOT PACKING GROUP:**

PG III

### **SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:**

100 lbs (2,4-D acid & Naphthalene)

**SARA TITLE III STATUS:**

311/312 Hazard Categories –  
313 Toxic Chemicals –

Immediate & Delayed Health Hazard, Fire Hazard  
Naphthalene, 2,4-D Ester

CALIFORNIA PROP 65:

Naphthalene

TSCA:

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

**SECTION 16 - OTHER INFORMATION**

HMIS HAZARD RATINGS	HEALTH	2
	FLAMMABILITY	2
	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:** May, 2018

**REFERENCE:** Updated for Naphthalene (Section 3, 8, 11 & 15)