

**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 :** SOLVE 2, 4-D  
**CHEMICAL NAME :** 2-Ethylhexyl ester of 2,4-Dichlorophenoxyacetic Acid  
**PRODUCT USE :** Herbicide  
**PRODUCT CODE :** EPA Reg. No 42750-22

**SECTION 2 - HAZARDS IDENTIFICATION SUMMARY**

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

White creamy liquid

**HEALTH HAZARDS:** Harmful if swallowed or absorbed through skin. Causes slight to moderate eye irritation.**PHYSICAL HAZARDS:** May release toxic fumes if burned.**ENVIRONMENTAL HAZARDS:** Toxic to some aquatic organisms and non-target plants**SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS**

COMPONENT	PERCENTAGE	CAS NUMBER
2-Ethylhexyl ester of 2,4-Dichlorophenoxyacetic Acid	61.7 %	1928-43-4
Ethylene glycol	1.4 %	107-21-1
Inert Ingredients	36.9 %	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.**NOTE TO PHYSICIAN:** May cause chemical pneumonitis if aspirated. If lavage is performed, suggest endotracheal and/or esophagosopic control.

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

**FLASHPOINT:** > 100°C

**EXTINGUISHING MEDIA:** Water spray, Foam

**FIRE AND EXPLOSION HAZARD:** Hydrogen chloride, Oxides of nitrogen

**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.

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

**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. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal.

**SECTION 7 - HANDLING AND STORAGE**

KEEP OUT OF REACH OF CHILDREN!

**HANDLING:** Use only in a well-ventilated area. Do not reuse this container. Wear proper safety equipment specified in Section 8 when mixing, loading or otherwise handling concentrate.

**STORAGE:** Do not store this product near fertilizers, seeds, insecticides or fungicides. Do not store near heat or open flame. Re-close all partially used containers by thoroughly tightening screw cap. Absorb any spill with a suitable clay absorbent and dispose of as indicated under Section 6.

**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

**EXPOSURE LIMITS (8 hour TWA, ppm):** .

COMPONENT	OSHA TWA	ACIGH TWA
2-Ethylhexyl ester of 2,4-Dichlorophenoxyacetic Acid	10	10
Ethylene glycol	100	100

**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 glasses 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.

**RESPIRATOR** - When handling in enclosed areas where exposure limits may be exceeded, use a respirator with an organic vapor removing cartridge with a prefilter 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 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:** 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.

## **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White creamy liquid
<b>Odor:</b>	Pungent odor
<b>pH:</b>	6.0 - 7.0
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	>100°C
<b>Evaporation Rate:</b>	No data
<b>Flammability:</b>	Not flammable
<b>Flammability Limits:</b>	Not applicable
<b>Vapor Pressure:</b>	0.4 mmHg a 24°C (2,4-D acid)
<b>Vapor Density:</b>	Not applicable
<b>Density:</b>	1.07 - 1.09 g/ml (8.9 - 9.1 lb/gl)*
<b>Solubility:</b>	Emulsifies
<b>Partition Coefficient:</b>	log Pow = 2.03 @ 25°C (2,4-D acid)
<b>Auto-Ignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	447.9 cSt @ 20°C, 322.4 @ 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 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:**

Oral LD <sub>50</sub> (rat)	- 1,750 mg/Kg (female rats)
Dermal LD <sub>50</sub> (rat)	- > 5,000 mg/Kg (male and female rats)
Inhalation LC <sub>50</sub> (rat)	- > 2.13 mg/L
Eye Irritation (rabbit)	- Mildly irritating
Skin Irritation (rabbit)	- Moderately irritating
Sensitization (guinea pig)	- Sensitizer

**CARCINOGEN STATUS:**

OSHA	- No
NTP	- No
IARC	- 2B (limited evidence if carcinogenicity in humans)

**TERATOGENICITY:** Studies have shown decreased fetal body weights and delayed development in offspring at doses toxic to mother animals.

**MUTAGENICITY:** Weight of evidence is that 2,4-D is not 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. 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:** 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 LC <sub>50</sub> , Bluegill –	524 mg/L
96 hour LC <sub>50</sub> , Rainbow trout –	250 mg/L

**AVIAN TOXICITY:** (Acid Technical)

Oral LD <sub>50</sub> , Quail –	500 mg/Kg
Oral Dietary LC <sub>50</sub> , 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. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

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:**

Containers < 18 gallons –

Not regulated by DOT

Containers ≥ 18 gallons –

UN3082, Environmentally Hazardous Substance, Liquid, n.o.s., 9, III, RQ (2,4-D Ester)

**DOT TRANSPORT HAZARD CLASS:**

Class 9

**UN NUMBER:**

3082

**DOT PACKING GROUP:**

III

**SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:**

100 lbs 2,4-D acid (approx 18 gallons of Solve 2,4-D)

**SARA TITLE III STATUS:**

311/312 Hazard Categories -  
313 Toxic Chemicals –

Immediate & Delayed Health  
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	2
	FLAMMABILITY	0
	PHYSICAL HAZARD	1
	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, 2017

**REFERENCE:** Revised Section 11 for IARC carcinogenicity classification