



# MATERIAL SAFETY DATA SHEET

Universal Crop Protection Alliance LLC  
1300 Corporate Center Curve  
Eagan, MN 55121

In Case of Emergency, Call:  
24 Hour Emergency Number  
CHEMTREC: 800-424-9300

Medical Emergency Contact:  
1-800-308-1241

## 1. CHEMICAL IDENTIFICATION

Product Name: **Trifluralin 4EC Herbicide** Product No.: 000150  
EPA Signal Word: CAUTION  
EPA Reg. Number: 1386-609-72693 CAS No.: 001582-09-8  
Active Ingredient (%): 2,6-dinitro-N, N-dipropyl-4-(trifluoromethyl)-benzamine 43%  
Chemical Name (synonym): Trifluralin Chemical Class: Herbicide

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Trifluralin	NE	NE	100 ppm*	
Aromatic 200	NE	NE		
Naphthalene	10 ppm	10 ppm	STEL 15 ppm Skin**	No

\* Supplier recommended guideline for total product.

\*\* Skin notification means potential for absorption through skin, eyes, and other mucous membranes. It is intended to alert the reader that inhalation may not be the only route of exposure. Limit skin exposure.

## 3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** Hazardous chemical. Clear orange liquid. Aromatic odor. Flash point = 210°F. May cause eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. May cause skin sensitization in certain individuals. Closed containers may explode due to pressure build-up when subjected to excessive heat or fire. Toxic fumes are released in fire situations. Product is toxic to fish, wildlife, and avian.

**Potential Health Effects:** This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

**Eye:** May cause moderate eye irritation. Corneal injury is unlikely.

**Skin:** Short single exposure may cause skin irritation. May cause drying or flaking of skin. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts. Has caused allergic skin reactions when tested in guinea pigs.

**Ingestion:** Single dose oral toxicity is considered to be low. Small amounts that might be swallowed incidental to normal operations are not likely to cause injury; swallowing larger amounts may cause injury. Aspiration into lungs may occur during vomiting or ingestion causing lung damage or even death due to chemical pneumonia.

**Inhalation:** Single exposure to vapors is not likely to be hazardous.

**Systemic (other Target Organs) Effects:** Trifluralin, in animals, has been shown to cause kidney, blood, and slight liver effects. The solvents have been shown to effect lungs, stomach, thyroid gland, and urinary tract. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust.

**Physical Properties**

Appearance: Clear deep orange liquid

Odor: Aromatic

**4. FIRST AID MEASURES**

If poisoning is suspected, immediately contact a physician, the nearest hospital, or the nearest Poison Control Center. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Eye Contact:** Irrigate with flowing water immediately and continually for 15 minutes. Consult Medical Personnel.

**Skin Contact:** Wash off with flowing water or shower.

**Inhalation:** Remove to fresh air if effects occur. If effects occur, consult a physician.

**Notes to Physician:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. The decision to induce vomiting or not should be made by a physician. Danger from lung aspiration should be weighed against toxicity when considering emptying the stomach.

**Medical Condition Likely to be Aggravated by Exposure:** None Established

**5. FIRE FIGHTING MEASURES**

**Fire and Explosion**

Flash Point (Test Method): 210°F (99°C) Penski Martin Closed Cup Method.

Flammable Limits (% in Air): (data based on solvent, 77°F, 25°C).

LFL: 1.8% Approximately.

UFL: 11.8% Approximately.

**Hazardous Decomposition Products:** Hazardous combustion products may include but are not limited to: nitrogen oxides, carbon monoxide, carbon dioxide, and fluorinated hydrocarbons.

**Extinguishing Media:** Use water, CO<sub>2</sub>, or dry chemicals.

**Fire-Fighting Instructions:** Dense smoke emitted when burned without sufficient oxygen. Keep people away. Isolate fire area and deny unnecessary entry. Closed containers may explode due to pressure build-up when subjected to excessive heat or intense fire. Containers exposed to intense heat from fires should be kept cool with water to prevent container weakening or rupture. Move containers from fire area if this is possible without hazard. Contain water run-off from fire if possible. Water run-off from fire, if not contained, may cause environmental damage.

**Protective Equipment for Fire Fighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves).

**6. ACCIDENTAL RELEASE MEASURES**

**In Case of Spill or Leak:** Wear protective clothing to prevent contact with the skin and eyes when cleaning up spills. For small spills, use non-reactive absorbent material to contain and clean up small spills. Prohibit the use of hot or sparking equipment in the immediate area. Prevent runoff. Collect wastes and put into suitable container for disposal. Report large spills to CHEMTREC and consult Universal Cooperatives, Inc. for assistance.

**7. HANDLING AND STORAGE**

**Precautions to be taken in handling and storage:**

**Handling:** Wash thoroughly with soap and water before eating drinking, chewing gum, using tobacco, or using the toilet. Practice good housekeeping procedures, for safe handling of the product.

**Storage:** No smoking, open flames or sources of ignition in handling and storage area. Do not contaminate water, food, or feed by storage or disposal. Store in original container above 40°F. If product is frozen, poor weed control may result. Do not store near heat or open flame.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

These precautions are suggested for conditions with a high potential for exposure. If handling procedures are such that there is only a low potential for exposure, less protection may be needed. Emergency conditions may require additional precautions.

**Engineering Controls:** Provide general and/or local exhaust ventilation to control airborne levels below exposure guidelines.

**Eye Contact:** Use chemical goggles.

**Skin Contact:** Use gloves resistant to this material.

**Inhalation:** Atmospheric levels should be maintained below the guidelines. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator. Applicators and all other handlers refer to the product label for personal protective clothing and equipment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear deep orange liquid.
<b>Odor:</b>	Aromatic.
<b>Boiling Point:</b>	450° to 527°F (232° to 275°C).
<b>Specific Gravity/Density:</b>	1.12 approximately.
<b>pH:</b>	(aqueous 50/50) 5.0 to 8.0.
<b>Solubility in H<sub>2</sub>O:</b>	Emulsifies in water.
<b>Vapor Pressure (solvent):</b>	< 1 mm Hg @68°F, 20°C.
<b>Vapor Density (solvent):</b>	4.7 (relative to air).

## 10. STABILITY AND REACTIVITY

### Reactivity

**Stability:** Stable under recommended storage conditions.

**Hazardous Polymerization:** Not known to occur.

**Conditions to Avoid:** Avoid freezing. Avoid contact with strong oxidizers.

**Hazardous Decomposition Products:** Hazardous decomposition products may include but are not limited to carbon dioxide, carbon monoxide, nitrogen oxides, and fluorinated hydrocarbons.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies

**Ingestion:** The oral LD<sub>50</sub> in rats is 3738 mg/kg.

**Dermal:** The LD<sub>50</sub> > 5000 mg/kg for rabbits.

**Eye:** May cause moderate eye irritation. Corneal injury is unlikely.

**Inhalation:** LC<sub>50</sub> = 5.59mg/L for male rats and 6.05mg/l for female rats for 4 hours.

**Mutagenicity:** For Trifluralin; in-vitro mutagenicity studies were negative. Animal mutagenicity studies were predominantly negative.

**Aquatic Life:** Toxic to aquatic organisms.

**Reproductive Hazard Potential:** Trifluralin did not interfere with reproduction in animal studies.

**Teratology (Birth Defects):** Trifluralin did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

**Carcinogenic Potential:** Contains naphthalene; which has caused cancer in some laboratory animals. A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rats with Trifluralin. Trifluralin is not anticipated to be a carcinogenic risk to man.

## 12. ECOLOGICAL INFORMATION

There is no information available for this product. The following information is based on the active ingredient, Trifluralin, unless otherwise identified.

### **Movement and Partitioning:**

**Based largely on information for Trifluralin:** Bio-concentration potential is moderate (BCF between 100 and 3000 or log POW between 3 and 5).

**Based largely on information for Aromatic 200:** The Bio-concentration Factor (BCF): BCF > 3000 or Log POW between 5 and 7)

### **Ecotoxicology:**

**Based largely on information for Trifluralin:** Material is very highly toxic to aquatic organisms on an acute basis (LC50 or EC50 is between 0.1 and 1.0 mg/L in most sensitive species).

**Based largely on information for Aromatic 200:** Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

**Degradation and Persistence:** Based on the stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

## 13. DISPOSAL CONSIDERATION

**Disposal Method:** Do not contaminate food, feed, or water by storage or disposal. Wastes are toxic. Improper disposal or excess waste, spray mixture, or rinsate is a violation of federal law. If wastes resulting from the use of this product cannot be disposed of according to label instructions, dispose of these wastes at an approved facility. Contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

## 14. TRANSPORT INFORMATION

**DOT Classification Non-Bulk < 23 lbs:** Not regulated by all modes of transportation.

**DOT Classification Non-Bulk > 23 lbs:** Environmentally Hazardous Substance, Liquid, N.O.S., (Trifluralin), 9, UN3082, PGIII, RQ (Trifluralin)

**DOT Classification Bulk Shipments:** Environmentally Hazardous Substance, Liquid, N.O.S., (Trifluralin, Naphthalene), 9, UN3082, PGIII, RQ (Trifluralin, Naphthalene)

**B/L Freight Classification:** Compound Tree or Weed Killing

## 15. REGULATORY INFORMATION

**NOTICE:** the information herein is presented in good faith and believed to be accurate as of the issue or revision date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another, it is users responsibility to ensure that its activities comply with federal, state, and local laws. The following specific information is given for the purpose of complying with numerous federal, state, and local laws and regulations.

### **SARA Title III Classification**

**Section 311/312:** This product has been reviewed according to the EPA "Hazard Categories" and is considered, under applicable conditions, to meet the following categories:

An immediate health hazard  
A delayed health hazard

**Section 313 Chemical(s):**

<u>Chemical Name</u>	<u>CAS Number</u>	<u>RQ</u>	<u>% in Product</u>
Trifluralin (Benzenamine, 2,6-Dinitro-N)	001582-09-8	10	43%
Naphthalene	91-20-3		7%

**RCRA Classification:** Not Applicable

**TSCA Status:** All ingredients are either listed or they are exempt from listing on the TSCA inventory.

**OSHA Hazard Communications Standard:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

**16. OTHER INFORMATION**

**NFPA Hazard Ratings**

Health: 2  
Flammability: 1  
Reactivity: 1

0	Least
1	Slight
2	Moderate
3	High
4	Severe

Issued Date: January, 2006

Supercedes: July 16, 1999

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