

MATERIAL SAFETY DATA SHEET

TREFLAN* E.C.

Page 1 of 4

Issue Date: 4/07

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Product

TREFLAN* E.C.

EPA Reg. No. 17545-9

Common Name: Liquid herbicide.

Chemical Description: Trifluralin.

TSCA/CAS No.: This product is a mixture — there is no specific CAS number.

Manufactured For

Monterey AgResources

P. O. Box 35000

Fresno, CA 93745-5000

Emergency Phone Numbers

Emergency Telephone: DAYS: (559) 499-2100 EVES: (559) 994-9144

CHEMTREC (24-Hour Emergency Number): (800) 424-9300

EPA National Response Center: (800) 424-8802

TREFLAN* is a registered trademark of Dow AgroSciences LLC.

SECTION 2. HAZARDOUS INGREDIENTS

CHEMICAL	CAS NO.	%	TLV OR PEL	RQ (lbs)
Trifluralin: alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N,-dipropyl-p-toluidine	1582-09-8	43.0	N.A.*	10
Inert ingredients, Total, Including		57.0		
Aromatic 200	64742-94-5			
Contains Naphthalene	91-20-3	7.0	10 ppm TWA / 15 ppm STEL	100

* N.A. - Not available.

SECTION 3. EMERGENCY/HAZARDS OVERVIEW

Clear deep orange liquid with an aromatic odor. May cause eye and skin irritation. LD₅₀ for skin absorption is > 5000 mg/kg. May cause allergic skin reaction. Oral LD₅₀ is 3738 mg/kg. Inhalation LC₅₀ is 5.59 and > 6.05 mg/L for 4 hours. Toxic to aquatic organisms. Avoid contact with strong oxidizers. Contain any liquid runoff. D.O.T. regulated in packages \geq 2.5 gallons.

HEALTH: 2 REACTIVITY: 1 FLAMMABILITY: 1 ENVIRONMENT: 1
(0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme)

SECTION 4. FIRST AID

Eyes: Flush eyes thoroughly with water for several minutes. Remove contact lenses, if present, after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin: Wash skin with plenty of water.

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

Note to Physician: The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical conditions of the patient.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

SECTION 5.	FIRE AND EXPLOSION HAZARDS
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Flash Point:	210°F (99°C).
Test Method:	PMCC
LFL Flammable Limits (based on solvent; 77°F (25°C)):	1.8% approximately.
UFL Flammable Limits:	11.8% approximately.
Autoignition Temperature:	Not available.
Flammability Classification:	Nonflammable.
Known Hazardous Products of Combustion:	Nitrogen oxides, carbon monoxide, carbon dioxide, and fluorinated hydrocarbons.
Properties that Initiate/Contribute to Intensity of Fire:	Not available.
Potential For Dust Explosion:	None.
Reactions that Release Flammable Gases or Vapors:	None known.
Potential For Release of Flammable Vapors:	Not known.
Unusual Fire & Explosion Hazards:	Closed containers may explode due to pressure build-up when subjected to excessive heat or intense fire.
Extinguishing Media:	Water, CO ₂ , or dry chemicals.
Special Firefighting Procedures:	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 container away from fire area if this is possible without hazard. Contain firewater run-off if possible. Firewater run-off if not contained may cause environmental damage. Wear positive-pressure self contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves).

SECTION 6.	SPILLS AND LEAKS
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Containment:	Product is toxic to fish. Prevent product spillage from entering drinking water supplies or streams.
Clean Up:	Collect liquid or absorb onto non-reactive absorbent material and package for disposal according to local, state and federal regulations.
Evacuation:	Not necessary but restrict entry.
Reporting:	When spills of trifluralin and naphthalene exceed the RQ it must be reported as a priority pollutant under the CERCLA spill reporting requirements.

SECTION 7.	STORAGE AND HANDLING
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Storage:	Store in original container only. Store above 40°F; avoid freezing. If frozen, poor weed control may result. Do not store near heat or open flame. Do not contaminate water, food or feed. Do not stack pallets more than two (2) high.
Transfer Equipment:	Transfer product using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc.

SECTION 8.	PERSONAL PROTECTIVE EQUIPMENT
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Eyes:	Protective eyewear.
Skin:	Long sleeved shirt and long pants; chemical-resistant gloves such as Barrier Lamine or Viton; shoes plus socks.
Respiratory:	Atmospheric levels should be maintained below the exposure guidelines (see Section 2). When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator.
Ventilation:	Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

SECTION 9.	PHYSICAL AND CHEMICAL DATA
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Appearance:	Clear, deep orange liquid.
Odor:	Aromatic.
pH (aqueous 50/50):	5.0 to 8.0
Vapor Pressure (solvent):	< 1 mm Hg at 68°F
Vapor Density (solvent) (Air = 1):	4.7
Boiling Point (solvent):	450 to 527°F (232-275°C).
Freezing Point:	Not available.
Water Solubility:	Emulsifies in water.
Density:	9.34 lbs./gal.
Evaporation Rate (butyl acetate = 1):	Not available.
Viscosity:	Not available.
% Volatile:	Not available.
Octanol/Water Partition Coefficient:	Not available.
Saturated Vapor Concentration:	Not available.

SECTION 10.	STABILITY AND REACTIVITY
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Stability:	Stable under recommended storage conditions.
Conditions To Avoid:	Avoid freezing. Do not store near heat or open flame.
Incompatibility:	Avoid contact with strong oxidizers.
Hazardous Decomposition Products:	May include but are not limited to carbon dioxide, carbon monoxide, nitrogen oxides, and fluorinated hydrocarbons.
Hazardous Polymerization:	Not known to occur.

SECTION 11.	POTENTIAL HEALTH EFFECTS
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Acute Effects:

Eyes:	May cause moderate eye irritation. Corneal injury is unlikely.
Skin:	Brief contact may cause slight skin irritation with local redness. May cause drying or flaking of the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD ₅₀ for skin absorption in rabbits is > 5000 mg/kg. Has caused allergic skin reactions when tested in guinea pigs.
Ingestion:	Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. The oral LD ₅₀ for rats is 3738 mg/kg.
Inhalation:	No adverse effects are anticipated from single exposure to vapor. The LC ₅₀ for rats is 5.59 mg/L (males) and > 6.05 mg/L (females) for 4 hours.

Systemic (Other Target Organ) Effects:

For trifluralin, in animals, effects have been reported on the following organs: blood, kidney and liver. For the solvent, in animals, effects have been reported on the following organs: lungs, stomach, thyroid gland and urinary tract. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust.

Cancer Information:

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. Contains naphthalene, which has caused cancer in some laboratory animals.

Teratology (Birth Defects):

Trifluralin did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

Reproductive Effects:

Trifluralin did not interfere with reproduction in animal studies.

SECTION 12.	ECOLOGICAL INFORMATION
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Movement & Partitioning:

Based largely or completely on information for trifluralin: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is slight (Koc between 2000 and 5000).

Based largely or completely on information for Aromatic 200: Bioconcentration potential is high (BCF is > 3000 or Log Pow between 5 and 7).

Degradation & Persistence:

Based largely or completely on information for trifluralin: 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.

Based largely or completely on information for Aromatic 200: Biodegradation may occur slowly under aerobic conditions (in the presence of oxygen).

Ecotoxicology:

Based largely or completely on information for trifluralin: Material is very highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ < 0.1 mg/L in most sensitive species).

Based largely or completely on information for Aromatic 200: Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in most sensitive species). Material is practically non-toxic to birds on a dietary basis (LC₅₀ is > 5000 ppm). Material is practically non-toxic to birds on an acute basis (LD₅₀ is > 2000 mg/kg)

SECTION 13.	DISPOSAL
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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.

SECTION 14.	TRANSPORTATION
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D.O.T. Information:	< 2.5 gallons 2.5 - 152 gallons > 152 gallons	Not D.O.T. Regulated. Environmentally Hazardous Substance, Liquid, N.O.S., (Trifluralin), 9, UN3082, PG III, RQ 10 lbs. Environmentally Hazardous Substance, Liquid, N.O.S., (Trifluralin/Naphthalene), 9, UN3082, PG III, RQ 10/100 lbs.
Other Shipping Description:	Compounds, Tree or Weed Killing (Herbicide), Liquid. NMFC Item 50320, LTL Class 60	

SECTION 15.	REGULATORY INFORMATION
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CERCLA: Trifluralin and naphthalene are listed as priority pollutants under the Clean Water Act and, as such, fall under the CERCLA spill reporting requirements of 40 CFR 302.

SARA TITLE III, Section 313 Toxic Chemicals: Trifluralin (43.0%) and Naphthalene (7.0%).

PROPOSITION 65: None.

SECTION 16.	OTHER
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While the information contained herein is based on data considered accurate and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act, it is provided for guidance only. Monterey AgResources does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations; in so doing, user assumes all risk in use of the material. The information contained herein is not to be taken as a warranty or representation for which Monterey AgResources assumes legal responsibility.