DREXEL TRIFLURALIN 4EC

SECTION 1: MATERIAL IDENTIFICATION

Product Name: **Drexel Trifluralin 4EC**
EPA Reg. No.: 19713-254
Product Usage: Herbicide

Manufacturer: Drexel Chemical Company
Address: 1700 Channel Avenue
PO Box 13327
Memphis, Tennessee, 38113-0327, USA
901-774-4370

Emergency Telephone Numbers:	CHEMTREC	800-424-9300
	DREXEL CHEMICAL COMPANY	901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Refer to SECTION 15: REGULATORY INFORMATION for explanation.

SECTION 2: HAZARD IDENTIFICATION

(As defined by the OSHA Hazard Communication Standard, 29)

Label Elements:
Signal Word:

DANGER

Classifications:
Hazard Class:

Toxicity Study:	Category:
Acute Toxicity, Oral	Category 4
Skin corrosion/ irritation	Category 2
Serious eye damage / irritation	Category 2B
Skin sensitizer	Category 1
Carcinogenicity	Category 2
Aspiration Liquids	Category 1
Hazard to Aquatic Environment, short term (Acute)	Category 1
Hazard to Aquatic Environment, short term (Chronic)	Category 1

Hazard Statements:

H Code:	Statement:
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H332	Harmful if inhaled
H315	Causes skin irritation
H320	Causes eye irritation
H317	May cause an allergic reaction
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

HNOC (Hazard not otherwise classified): None available / Not applicable

Precautionary Statements:
Prevention: Keep out of reach of children.
If medical advice is needed, have product container or label at hand.

Obtain special instructions before use.
If medical advice is needed, have product container or label at hand.
Do not handle until all safety precautions have been read and understood.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
In case of inadequate ventilation, wear respiratory protection.
Keep container tightly closed.
Avoid release into the environment.

Response:

If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get immediate medical advice/attention.

If Swallowed: Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. Treat symptomatically.

If Inhaled: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER or doctor if you feel unwell.

If on Skin or Clothing: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

If exposed or concerned: None available. Get medical attention.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in a cool, dry, and secure area designated specifically for pesticides and away from heat sources. Always use oldest stock first.

Disposal: Dispose of contents/container in accordance with your local or area regulatory authorities.

HNOC (Hazard not otherwise classified): None available / Not applicable

SECTION 3: COMPOSITION INFORMATION

Chemical Name:	Synonym:	CAS No.:	EC No.:	RTECS:	% By Wt.:
Active Ingredient:					
Trifluralin	α,α,α-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine	1582-09-8	216-428-8	XU9275000	44.5 %
Inert Ingredients:	N/A	N/A	N/A	N/A	55.5 %

SECTION 4: FIRST-AID MEASURES

Have the product container, label and / or Safety Data Sheets (SDS) with you when calling a poison control center or doctor or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.

Eye Contact: Hold eye open and rinse slowly and gently with water for 15 to 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 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Skin/Clothing Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. 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.

Indication of Medical Attention and Special Treatment Needed:	**NOTE TO PHYSICIAN:** This product contains an aromatic hydrocarbon and can be extremely harmful if swallowed. Aspiration of this product may produce a severe pneumonitis. Stomach lavage with a cuffed endotracheal tube in place and immediate administration of activated charcoal, 6 to 8 heaping teaspoonfuls with water, should be considered. Treatment is otherwise symptomatic and supportive.

SECTION 5: FIRE FIGHTING MEASURES

Fire Fighting Media:	Dry chemical, CO_2, Foam, Water. Do not use water jet, as this may spread burning material. Use extinguishing media suitable to local circumstances and the surrounding environment. Avoid stirring up dust extinguisher stream. Minimize the use of water to avoid environmental contamination. Contain all runoff.
Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area and fight the fire from upwind at a safe distance to avoid hazardous vapors or decomposition products. Cool closed containers exposed to fire with water spray, if possible. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal.
Special Protective Equipment for Firefighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Specific Fire Hazards:	Vapors will ignite when exposed to heat, flame and other sources of ignition. Vapors can travel to a source of ignition and flash back causing and explosion and fire. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Thermal decomposition during a fire can produce fumes and irritating gases. Flammability classification (OSHA 29 CFR 1910.1200): N/Av Flash point: 147°F Lower flammable limit (% by volume): N/Av Upper flammable limit (% by volume): N/Av
Hazardous Combustion Products:	May emit toxic fumes under fire conditions, such as Nitrogen oxides (NO_x), Ammonia, Oxides of sulfur, Hydrogen chloride and Carbon monoxide.

National Fire Protection Association:

NFPA: 	**Health**	**Fire**	**Reactivity**
	2	**2**	**0**

Ratings: **4-Extreme** **3-High** **2-Moderate** **1-Slight** **0-Insignificant**

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to SECTION 7: HANDLING AND STORAGE, for additional precautionary measures. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Environmental Precautions:

Do not flush into surface water or sanitary sewer system. Prevent from entering soil, ditches, sewers, waterways and/or groundwater. Refer to SECTION 12: ECOLOGICAL INFORMATION.

Steps to be taken if Material is Released or Spilled:

Control the spill at its source.

Small spills: Stop the flow of material, if this is without risk. Apply suitable absorbent and sweep up. Collect in suitable and properly labeled containers. Prevent entry into waterways, sewers, basements or confined areas.

Large spills: Stop the flow of material, if this is without risk. Apply suitable absorbent and sweep up. Collect in suitable and properly labeled containers. Contact Drexel Chemical Company for clean-up assistance. Refer to SECTION 13: DISPOSAL CONSIDERATIONS, for additional information. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7: HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Avoid breathing vapors. Do not eat, drink or smoke when using this product. Use with adequate ventilation. Wear chemical protective equipment when handling. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. Do not reuse this container. Refer to SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Storage: Avoid freezing. Store at temperatures above 40°F. If frozen, poor weed control may result. Store in the original container only. Keep container closed when not in use. Store in a cool, dry, ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies. Always use oldest stock first.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Components:	OSHA PEL	ACGIH TLV
Trifluralin	N/A	N/A

THIS SECTION IS FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD REFER TO THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Engineering Controls:

Ventilation: Investigate engineering techniques to reduce exposures. When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility / station and safety shower. Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Personal Protection:

Eye/Face Protection: Eye contact should be avoided through the use of chemical safety glasses, goggles, or a face shield selected in regard to exposure potential. Wear chemical splash goggles to prevent vapors or mists from entering the eyes. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face thoroughly with soap and water before smoking or eating. Avoid getting wash water in eyes.

Hand Protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR") or Viton, Polyvinyl chloride ("PVC" or "vinyl"). The selection of gloves for a particular application and duration of use in the workplace should also be taken into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut/ puncture protection, dexterity, thermal protection), potential body reactions to gloves materials, as well as the instructions / specs provided by the supplier of gloves.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Respiratory Protection: Dusk mask is recommended for dusty or misty conditions. Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. NIOSH/MSHA approved respiratory protection should be worn. When handling in enclosed areas, when large quantities of dusts are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). Respiratory protection must be provided in accordance with current local regulations.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Reported Value
Physical State	Liquid
Appearance / Color	Orange
Odor	Aromatic Odor
Odor threshold	Not available
pH	6.0 – 7.0
Melting point	Not available
Freezing point	<20°F
Boiling point	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability	Not available
Upper flammability/explosive limits	Not available
Lower flammability/explosive limits	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	8.97 lbs. / gal.
Solubility in water	Emulsifies in water
Solubility in organic solvents	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available

Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidizing properties	Not available
Dissociation Constant	Not available
% Volatiles	Not available

Property Note: The physical properties and reported values are typical values based on materials tested but may vary from sample to sample. Thus, typical values should not be construed as a guaranteed analysis of any specific lot/ batch or specification items.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Thermally stable at typical use temperatures and in closed containers.

Chemical Stability: Stable under recommended storage conditions.

Hazardous Polymerization: Polymerization will not occur.

Conditions to Avoid: Avoid open flame, high temperatures and static discharge.

Incompatible Materials: Strong oxidizers. Hydrogen fluoride.

Hazardous Decomposition Products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen fluoride. Nitrogen oxides. Silicon oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Potential routes of exposure/potential health effects:		Skin contact, Eye contact, Inhalation, Ingestion
Acute Oral:	**LD_{50} (Rat):**	3738 mg/kg
Acute Dermal:	**LD_{50} (Rat):**	>2,000 mg/kg
Acute Inhalation:	**LC_{50} (Rat):**	>5.0 mg/L
Eye Irritation:	**(Rabbit):**	Moderate irritation
Skin Irritation:	**(Rabbit):**	Moderate irritation
Skin Sensitization:	**(Guinea Pig):**	Sensitizer. May cause an allergic skin reaction.

Chronic Toxicity: No data available

Carcinogenicity: A low incidence of urinary 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.
IARC IARC 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Trifluralin).

Mutagenicity: No data available

Teratogenicity: No data available

Reproductive Toxicity: No data available

Developmental Toxicity: No data available

Specific target organ toxicity- single exposure: No data available / Not classified

Specific target organ toxicity- repeated exposure: No data available / Not classified

Other Hazards Effects: Aspiration Hazard: May be fatal if swallowed and enters airways.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

Trifluralin — Data for the active ingredient Trifluralin.

ECO-ACUTE TOXICITY

Acute Aquatic Toxicity:	**Aquatic Organism, LC_{50} / EC_{50}**	<0.1 mg/L Very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in most sensitive species).
	Rainbow Trout, LC_{50} 96 hour	0.88 mg/L
	Bluegill Sunfish, LC_{50} 96 hour	0.089mg/L
	Daphnia magna, LC_{50} 48 hour	0.245 mg/L
	Mussel, Mytilus edulis, EC_{50}, 48 hour	0.096mg/L
Chronic Aquatic Toxicity:	**Rainbow Trout, Static test 48 d, growth, NOEC**	0.00114 mg/L
	Daphnia Magna, Static test 21 d, growth, NOEC	0.0507 mg/L
Toxicity to Bacteria:	**Activated sludge, EC_{50} 3 Hour**	>100 mg/L
Arthropod Toxicity:	**Bees, Acute LD_{50}**	Trifluralin is not toxic to bees. >100 micrograms / bee (skin and oral).
Bird Toxicity:	Material practically non-toxic to birds on an acute basis Material practically non-toxic to birds on a dietary basis	
	Mallard Duck, LD_{50}	>2,000 mg/kg
	Bobwhite Quail, LD_{50}	>5,000 mg/kg
Acute Algal Toxicity/ Aquatic Plants:	**Green Algae, LC_{50} 96 hour**	0.0532 mg/L
	Lemma Gibba, EC_{50} (7d)	0.043 mg/L
	Diatom Navicula EC_{50}	0.015mg/L
Soil Organism Toxicity:	**Earthworm acute toxicity**	>1000 mg/kg

Persistence and degradability: Environmentally persistent, but low mobility due to high affinity for soils and low solubility in water.

Bioaccumulation:

Mobility in soil: Fails to pass OECD/EEC tests for ready biodegradability.

- 10-day Window: Fail
- Biodegradation: 5%
- Exposure time: 28 d
- Method: OECD Test Guideline 301B or Equivalent

Chemical Oxygen Demand: 1.37 mg/mg

Stability in Water (1/2-life):

- Hydrolysis, half-life, >1year, pH 3 – 9, Measured
- Photolysis, half-life, 0.19 – 3.08 Hour, Measured

Photodegradation:

- Test Type: Half-life (indirect photolysis)
- Sensitizer: OH radicals
- Atmospheric half-life: 5.347 Hour
- Method: Estimated

Other adverse effects: Do not contaminate water supplies, lakes, streams, ponds or drains with this product.

SECTION 13: DISPOSAL CONSIDERATIONS

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14: TRANSPORT INFORMATION

DOT:	**Packages ≤ 2.5 gallons**	Not Regulated
	Packages > 2.5 gallons	UN3082, Environmentally Hazardous Substances, Liquid, N.O.S., (Trifluralin) 9, PG-III, RQ 10 lbs.
IMDG:	UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (TRIFLURALIN) 9, III, RQ 10 lbs., MARINE POLLUTANT	
IATA / ICOA:	UN 3082, Environmentally Hazardous Substances, Liquid, N.O.S., (Trifluralin) 9, PG-III, RQ 10 lbs.	

UN Identification No.:	UN 3082
Proper Shipping Name:	Environmentally Hazardous Substances, Liquid, N.O.S., (Trifluralin)
Hazard Class:	9
Packing Group:	III
Reportable Quantity:	10 lbs.
Environmental Hazard:	Marine Pollutant
Freight Description:	Agricultural Herbicide, Liquid, N.O.S.
ERG Guide No.:	171
Transport Information Note:	None

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard:	**This product contains hazardous components as defined under the criteria of the Federal OSHA Hazardous Communication Standard 29 CFR 1910.1200.**
Pesticide Registration:	This product is a pesticide registered by the Environmental Protection Agency (EPA) and is subject to certain FIFRA labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.
EPA Reg. No.:	19713-254
FIFRA Label Signal Word:	CAUTION
FIFRA Label Information:	KEEP OUT OF REACH OF CHILDREN
FIFRA Label Information:	Hazards to Humans and Domestic Animals CAUTION: Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash thoroughly with soap and water after handling. PERSONAL PROTECTIVE EQUIPMENT (PPE) Applicators and other handlers must wear: Long-sleeve shirt and long pants, socks and shoes and chemical-resistant gloves made of Nitrile, Butyl, Neoprene and / or barrier laminate.

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 exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

EPCRA SARA Title III Classification:

Section 302:	Extremely Hazardous Substance Notification:	This material is not known to contain any Extremely Hazardous Substances.
Sections 311 and 312:	Immediate (Acute) Health Hazard:	Yes
	Delayed (Chronic) Health Hazard:	Yes
	Fire Hazard:	No
	Reactive Hazard:	No
	Sudden Release of Pressure Hazard:	No

Section 313 Toxic Release Inventory (TRI): Trifluralin, CAS No.: 1582-09-8, 313

CERCLA Reportable Quantity (RQ): Trifluralin, CAS No.: 1582-09-8, 10 lbs.
SARA 304 EHS Reportable Quantity (RQ): Not listed / Not available

RCRA Hazardous Waste Classification (40 CFR 261): Not listed / Not available

US EPA Toxic Substances Control Act (TSCA): All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

Trifluralin	Listed as causing:	Not listed
	Listing date:	Not listed
	Listing basis:	Not listed

This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

SECTION 16: OTHER INFORMATION

Date Issued: June 30, 2020 **Date Supersedes:** March 21, 2018 **Revision:** 0

For all non-emergency questions about this product, please contact:
1700 Channel Avenue
PO Box 13327
Memphis, Tennessee 38113-0327, USA
Phone: 901-774-4370
Fax: 901-774-4666
Website: www.drexchem.com

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.