



# SAFETY DATA SHEET

## DREXEL TRIFLURALIN TECHNICAL

### Section 1: Material Identification

**Product Name:** Drexel Trifluralin Technical

**EPA Reg No.:** 19713-673

**CAS NO:** 1582-09-8

**Formula:** C<sub>13</sub>H<sub>16</sub>F<sub>3</sub>N<sub>3</sub>O<sub>4</sub>

**Company:** Drexel Chemical Company  
1700 Channel Avenue  
Memphis, TN 38106

**Synonyms:** α,α,α-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine

**Identifiers:**

- EINECS:** 216-428-8
- RTECS:** XU9275000
- DOT label:** See Section 14: Transport Information

#### **Emergency Telephone Number:**

CHEMTREC	Drexel Chemical Co.
Tel: 1-800-424-9300	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 Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see **Section 15. REGULATORY INFORMATION** for explanation.

### Section 2: Hazard Identification (As defined by the OSHA Hazard Communication Standard, 29)

**GHS Classification:**

<b>Health Hazards:</b>	Acute toxicity – oral	Category 4
	Acute toxicity – inhalation	Category 3
	Sensitization – skin	Category 1
	Carcinogenicity	Category 2
	Aquatic acute toxicity	Category 1
	Aquatic chronic toxicity	Category 1

**GHS label elements:**

**Signal Word:** Warning



**Hazard statements:**

Harmful if swallowed.  
May cause allergic skin reaction.  
Toxic if inhaled.  
Suspected of causing cancer.  
Very toxic to aquatic life with long lasting effects.

**Precautionary statements:**

**Prevention:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Avoid breathing fume/mists/vapor/spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

**If swallowed:** Call a POISON CENTER or doctor/physician if you feel unwell.  
Rinse mouth.  
**If on skin:** Wash with plenty of soap and water.  
**If inhaled:** remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.  
**If exposed or concerned:** Get medical advice/attention.  
**If skin irritation or rash occurs:** Get medical advice/attention. Wash contaminated clothing before reuse.  
Collect spillage.

**Storage:**

Store in a well-ventilated place.  
Keep container tightly closed.  
Store locked up.

**Disposal:**

Dispose of contents/container to hazardous or special waste collection point.

**Section 3: Composition Information**

<u>Components</u>	<u>CAS No.:</u>	<u>% By Wt.:</u>	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>
Active Ingredient: Trifluralin	1582-09-8	96.3%	N/Av	N/Av
Inert Ingredients:	N/A	3.7%	N/A	N/A



## Section 6: Accidental Release Measures

### Steps to be taken if Material is Released or Spilled:

Contain spilled material if possible. Small spills: sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Drexel Chemical Co. for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

### Personal Precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, 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:

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

## Section 7: Handling and Storage

### KEEP OUT OF REACH OF CHILDREN

**Handling:** **General Handling:** Avoid contact with eyes, skin, and clothing. When using do not eat, drink, or smoke. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Use with adequate ventilation. Wear chemical protective equipment when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls/Personal Protection.

**Storage:** Store in a cool, dry, well 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.

## Section 8: Exposure Controls / Personal Protection

**Exposure Limits:** TLV: Trifluralin N/Av

### Personal Protection:

**Eye/Face Protection:** Wear safety glasses with side shields or chemical splash goggles to prevent dusts from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

**Skin Protection:** If repeated or prolonged contact wear chemical resistant gloves. Applicators and handlers must wear long sleeved shirt, long pants and shoes with socks. 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.

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR") or Polyvinyl chloride ("PVC" or "vinyl").

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to be exposed to dusts. When handling in enclosed areas, when large quantities of dusts are generated 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).

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

**Engineering Controls:**

Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

## Section 9: Physical and Chemical Properties

<b>Appearance:</b>	Bright orange crystalline solid
<b>Odor:</b>	Aromatic solvent odor
<b>Odor threshold:</b>	N/Av
<b>pH:</b>	(Aqueous 50/50) 7.0
<b>Melting point/freezing point:</b>	43.0 – 47.5°C (109.4 to 117.5°F)
<b>Solubility (ies) water:</b>	0.3 ppm at 25°C
<b>Boiling point:</b>	70°C (158°F) at 0.016 mmHg (Est.)
<b>Flash Point:</b>	301°F Setaflash Closed Cup (ASTM Method D 3278-82)
<b>Evaporation rate:</b>	N/Av
<b>Flammability (solid, gas):</b>	N/Av
<b>Upper/lower flammability or explosive limits:</b>	N/Av
<b>Vapor Pressure (mmHg):</b>	6.1 x 10 <sup>-3</sup> Pascal's at 25°C
<b>Vapor density:</b>	N/Av
<b>Relative density:</b>	N/Av
<b>Partition coefficient: n-octanol/water:</b>	N/Av
<b>Auto-ignition temperature:</b>	N/Av
<b>Decomposition temperature:</b>	N/Av
<b>Viscosity:</b>	N/A
<b>Explosive properties:</b>	N/Av

## Section 10: Stability and Reactivity

**Stability/Instability:** Thermally stable at typical use temperatures and in closed containers.

**Conditions to Avoid:** Avoid temperatures above 158°F (70°C). Product can decompose at elevated temperatures. Generation of gas can cause pressure in closed systems. Pressure build-up can be rapid.

**Incompatible Materials:** Avoid contact with oxidizing materials.

**Hazardous Polymerization:** Will not occur.

**Thermal Decomposition:** Decomposition products can include and are not limited to: Carbon oxides, nitrogen oxides, fluorinated compounds and toxic flammable gases.

## Section 11: Toxicological Information

### Acute Toxicity:

#### Ingestion:

- Oral LD50, (rat): 1930 mg/kg

#### Dermal:

- Dermal LD50, (rat): >5,000 mg/kg

#### Inhalation:

- Inhalation LC50, 1 h, (rat): 2,800 mg/m<sup>3</sup>

### Eye Irritation (rabbit):

- Moderate irritation

### Skin Irritation (rabbit):

- Non-irritating

### Sensitization Skin (Guinea Pig):

- Sensitizer

### Specific Target Organ Systemic Toxicity (Single Exposure):

- Evaluation of available data suggests that this material is not an STOS-SE toxicant.

### Specific Target Organ Systemic Toxicity (Repeated Exposure):

- In animals, effects have been reported on the following organs: liver, kidney, blood.

### 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 3 – Group 3:** Not classifiable as to its carcinogenicity to humans (Trifluralin).
  - **ACGIH:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
  - **NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP.
  - **OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Teratogenicity:

- Toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

### Mutagenicity:

- In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were predominantly negative.

### Reproductive toxicity:

- In animal studies, did not interfere with reproduction.

## Section 12: Ecological Information

Data for the active ingredient Trifluralin:

### ENVIRONMENTAL FATE:

#### Persistence and Degradability:

- Material is expected to biodegrade very slowly in the environment. 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

#### Acute toxicity to fish:

- Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).
  - LC50, *Oncorhynchus mykiss* (rainbow trout), flow through test, 96 Hour, 0.088 mg/l
  - LC50, *Lepomis macrochirus* (Bluegill sunfish), flow-through test, 96 Hour, 0-089 mg/l

#### Acute toxicity to aquatic invertebrates:

- EC50, water flea *Daphnia magna*, static test, 48 Hour, 0.245 mg/l
- EC50, mussel *Mytilus edulis*. Static test, 48 Hour, 0.096 mg/l

#### Acute toxicity to algae/aquatic plants:

- ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, 0.0532 mg/l
- EC50, *Lemna gibba*, Growth inhibition, 7d, 0.043 mg/l
- EbC50, diatom *Navicula* sp., 5 d, Biomass, 0.015 mg/l

#### Toxicity to bacteria:

- EC50, activated sludge, 3 Hour, > 100 mg/l

#### Chronic toxicity to fish:

- NOEC, *Oncorhynchus mykiss* (rainbow trout), static test, 48 d, growth, 0.00114 mg/l

#### Chronic toxicity to aquatic invertebrates:

- NOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, growth, 0.0507 mg/l

#### Toxicity to above ground organisms:

- Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
- Material practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
  - Oral LD50, *Colinus virginianus* (Bobwhite quail), > 2250 mg/kg bodyweight.
  - Dietary LC50, *Colinus virginianus* (Bobwhite quail), 5 d, > 5000 mg/kg diet.
  - Oral LD50, *Apis mellifera* (bees), > 100 µg/bee.
  - Contact LD50, *Apis mellifera* (bees), > 100 µg/bee

## 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:** UN 3077, Environmentally hazardous substances, solid, n.o.s., (Trifluralin), 9, PG-III, RQ 10 lbs.

**IMO-IMDG:** UN 3077, Environmentally hazardous substances, solid, n.o.s., (Trifluralin), 9, PG-III, RQ 10 lbs. Marine Pollutant.

**ICAO/IATA:** UN 3077, Environmentally hazardous substances, solid, n.o.s., (Trifluralin), 9, PG-III, RQ 10 lbs.

**Freight description:** Weed or tree killing compound, solid, n.o.s.

**ERG Guide No.:** 171

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:**

This product is hazardous according to the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**EPA FIFRA INFORMATION:**

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain 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 chemical. The hazard information required on the pesticide label is listed out below. The pesticide label also includes other important information, including directions for use.

**EPA Label Human Hazard Statements:** CAUTION: Causes moderate eye irritation. Prolonged or repeated skin contact may cause allergic reactions in some individuals. Avoid contact with eyes or clothing. Wash

thoroughly with soap and water after handling.

**SARA/TITLE III:**

- **Sec. 302. Extremely Hazardous Substance Notification:** This material is not known to contain any Extremely Hazardous Substances.
- **Sec. 311/312. Hazard Categories:** Immediate health hazard.  
Delayed health hazard.
- **Sec. 313. Toxic Chemical(s):** Trifluralin (CAS 1582-09-8) 96.3%
- **RCRA Waste Code:** Not listed

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

- This product is not listed.

**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.

## Section 16: Other Information

*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 below. 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.*

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