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**In Case of Emergency, Call  
1-800-327-8633 (FAST MED)**

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**MSDS prepared by:**

Department of Regulatory & Biological Assessment  
Syngenta Canada Inc.

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## SECTION – 1: PRODUCT IDENTIFICATION

**Product Identifier:** Traxos®Two Grass Component Formulation No.: A14298F  
**Registration Number:** 31674 (Pest Control Products Act)  
**Chemical Classes:** A mixture of carboxylic acid derivative and phenylpyrazoline herbicides.

**Active Ingredient (%):** Clodinafop-propargyl (2.5 %) CAS No.: 105512-06-9  
**Chemical Name:** prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoro-2-pyridyloxy)phenoxy]propionate  
**Chemical Class:** A Carboxylic Acid Derivative Herbicide

**Active Ingredient (%):** Pinoxaden(2.5 %) CAS No.: 243973-20-8  
**Chemical Name:** 8-(2,6-diethyl-p-tolyl)-1,2,4,5-tetrahydro-7-oxo-7H-pyrazolo[1,2-d][1,4,5]oxadiazepin-9-yl 2,2-dimethylpropionate  
**Chemical Class:** A Phenylpyrazoline Herbicide

**Product Use:** Traxos®Two Grass Component is a herbicide that is applied as a spray for broad-spectrum control of grasses in spring wheat and durum wheat. Please refer to product label for further details.

## SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Isobutanol	100 ppm TWA	50 ppm TWA	50 ppm TWA**	No	Not Established
Tetrahydrofurfuryl Alcohol	Not Established	Not Established	2 ppm TWA****	No	Yes
Petroleum Solvent	Not Established	Not Established	100 mg/m <sup>3</sup> (15 ppm)*	No	Not Established
Cloquintocet-mexyl (< 1%)	Not Established	Not Established	10 ppm TWA	No	Not Established
Naphthalene (< 5%)	10 ppm TWA	10 ppm TWA (skin)	10 ppm TWA**	NTP: “Anticipated Carcinogen” IARC: Group 2B Possible Human Carcinogen	Yes
Clodinafop-propargyl (2.5%)	Not Established	Not Established	1.0 mg/m <sup>3</sup> TWA***	No	Not Established
Pinoxaden (2.5%)	Not Established	Not Established	0.1 – 1.0 mg/m <sup>3</sup> TWA band***	No	Not Established

\* Recommended by Manufacturer  
\*\* Recommended by NIOSH  
\*\*\* Syngenta Occupational Exposure Limit (OEL)

\*\*\*\* Recommended by AIHA (American Industrial Hygiene Association)  
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

### SECTION – 3: HAZARDS IDENTIFICATION

#### Symptoms of Acute Exposure

Causes skin irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness. May be harmful if swallowed and enters airway.

#### Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

#### Physical Properties

Appearance: Light, transparent amber liquid.

Odour: Aromatic.

#### Unusual Fire, Explosion and Reactivity Hazards

Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

#### Potential Health Effects

**Relevant routes of exposure:** Skin, eyes, mouth, lungs.

### SECTION – 4: FIRST AID MEASURES

**IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital.** Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

**EYE CONTACT:** Flush eyes with clean water, holding eyelids apart for a minimum of 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

**SKIN CONTACT:** Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with plenty of water for 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.

**INHALATION:** Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

**INGESTION:** If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Do not induce vomiting unless directed by a physician or a poison control center. Do not give **any** liquid to the person. Call Syngenta, a poison control centre or doctor for treatment advice.

## NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically. Contains petroleum distillate - vomiting may cause aspiration pneumonia.

### SECTION – 5: FIRE FIGHTING MEASURES

**Flash point and method:** > 78 °C

**Upper and lower flammable (explosive) limits in air:** Not applicable.

**Auto-ignition temperature:** 305 °C

**Flammability:** Combustible liquid.

**Hazardous combustion products:** During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion, including carbon monoxide and carbon dioxide.

**Conditions under which flammability could occur:** Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion. Keep fire exposed containers cool by spraying with water.

**Extinguishing media:** Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

**Sensitivity to explosion by mechanical impact:** None known.

**Sensitivity to explosion by static discharge:** None known.

### SECTION – 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear equipment and clothing as described in Section 8 and/or the product label.

**Procedures for dealing with release or spill:** Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory authority.

### SECTION – 7: HANDLING AND STORAGE

**Handling practices:** KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.

**Appropriate storage practices/requirements:** Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

**National Fire Code classification:** Class III A (combustible liquid)

## SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Applicable control measures, including engineering controls:** This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING OF THIS PRODUCT.**

**CONSULT THE PRODUCT LABEL FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS.**

### **Personal protective equipment for each exposure route:**

**General:** Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics or handling tobacco.

**INGESTION:** Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

**EYES:** Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**SKIN:** Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, nitrile, butyl, neoprene, polyvinyl chloride or Viton), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

**INHALATION:** A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

## SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Light, transparent amber liquid.

**Formulation Type:** Emulsifiable Concentrate

**Odour:** Aromatic.

**pH:** 5.9 (1% aqueous solution @ 25°C).

**Vapour pressure and reference temperature:** 4.0 x 10<sup>-8</sup> mmHg @ 20 °C (Clodinafop-propargyl)  
3.5 x 10<sup>-9</sup> mmHg @ 25 °C (Pinoxaden)

**Vapour density:** Not available.

**Boiling point:** Not available.

**Melting point:** Not applicable.

**Freezing point:** Not available.

**Specific gravity or density:** 0.99 g/mL @ 20 °C.

**Evaporation Rate:** Not available.

**Water/oil partition coefficient:** Not available.

**Odour threshold:** Not available.

**Viscosity:** 12 cps (or mPas)

**Solubility in Water:** 4 mg/L @ 25 °C (Clodinafop-propargyl)  
200 mg/L @ 25 °C (Pinoxaden)

## SECTION – 10: STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal use and storage conditions.

**Conditions to avoid:** Open flames or sources of ignition. Excessive heat.

**Incompatibility with other materials:** None known.

**Hazardous decomposition products:** Can decompose at high temperatures forming toxic gases.

**Hazardous polymerization:** Will not occur.

## SECTION – 11: TOXICOLOGICAL INFORMATION

### Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Female Rat):	> 5,000 mg/kg body weight
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rat):	> 5,050 mg/kg body weight
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat):	> 2.64 mg/L air - 4 hours
Eye Contact:	<u>Minimally Irritating (Rabbit)</u>	
Skin Contact:	<u>Moderately Irritating (Rabbit)</u>	
Skin Sensitization:	<u>Sensitizer (Guinea Pig)</u>	

### **Reproductive/Developmental Effects**

Clodinafop-Propargyl:	None observed.
Pinoxaden:	Teratogenicity: Not teratogenic in rats or rabbits. Reproduction: No reproductive effects observed.

### **Chronic/Subchronic Toxicity Studies**

Clodinafop-Propargyl:	Liver changes, anemia and skin reactions.
Pinoxaden:	Subchronic: Predominantly kidney and liver effects at high doses. Chronic: Predominantly kidney and liver effects at high doses. Neurotoxicity: No neurotoxic effects (acute or subchronic).

### **Carcinogenicity**

Clodinafop-Propargyl:	Increased incidences of benign tumors in mice (liver) and rats (ovary, prostate).
Pinoxaden:	No compound-related tumors in rats or mice.

### **Other Toxicity Information:**

None.

### **Toxicity of Other Components**

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

Cloquintocet-mexyl (< 1%):

Causes mild eye and skin irritation. Slightly acutely toxic if inhaled. Allergic skin reactions are possible.

Isobutanol:

High concentrations may result in dizziness, confusion and signs of intoxication. May cause irritation to eye, skin or mucous membranes.

Naphthalene (< 5%):

Chronic overexposure to naphthalene can affect the liver, kidney, respiratory tract and blood.

Carcinogen Status:

NTP: Anticipated Carcinogen

IARC: Group 2B Possible Human Carcinogen

Petroleum Solvent:

Slight eye irritant. Frequent or prolonged contact may cause skin irritation or dermatitis. High vapour/aerosol concentrations may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other CNS effects.

Tetrahydrofurfuryl Alcohol (THFA):

May be harmful if swallowed. Causes respiratory tract irritation. Causes skin irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

**Other materials that show synergistic toxic effects together with the product:** None known.

### Target Organs

#### Active Ingredient

Clodinafop-Propargyl:	Liver, skin, bone marrow
Pinoxaden:	Kidney

#### Inert Ingredients

Cloquintocet-mexyl:	Eye, skin, lung, digestive tract
Isobutanol:	CNS, skin, eye
Naphthalene:	Liver, kidney, respiratory tract, blood
Petroleum Solvent:	Eye, respiratory tract, CNS
Tetrahydrofurfuryl Alcohol (THFA):	Digestive tract, respiratory tract, skin, eye, CNS, kidney

## SECTION – 12: ECOLOGICAL INFORMATION

### Summary of Effects

Traxos®Two Grass Component is an herbicide that is applied as a spray for broad-spectrum control of grasses in wheat and barley. The active ingredient, pinoxaden, is non-toxic to birds and insects (bees) and slightly toxic to aquatic organisms. The active ingredient, clodinafop-propargyl, is highly toxic to fish, moderately toxic to water invertebrates (water flea), but has low toxicity to birds and practically no toxicity to bees.

### Eco-Acute Toxicity

Clodinafop-Propargyl:

Green Algae 5-Day EC <sub>50</sub>	> 3.9 ppm
Bees LC <sub>50</sub> /EC <sub>50</sub> (Contact)	> 100 µg/bee
Invertebrates (Water Flea) LC <sub>50</sub> /EC <sub>50</sub>	> 2.0 ppm
Fish (Trout) 96-hr LC <sub>50</sub> /EC <sub>50</sub>	0.39 ppm
Fish (Bluegill) 96-hr LC <sub>50</sub> /EC <sub>50</sub>	0.21 ppm
Birds (8-day Dietary - Bobwhite Quail) LC <sub>50</sub> /EC <sub>50</sub>	> 5,200 ppm
Birds (8-day Dietary - Mallard Duck) LC <sub>50</sub> /EC <sub>50</sub>	> 5,200 ppm

Pinoxaden Technical:

Blue-green Algae 96-hr EC <sub>50</sub>	3.3 ppm
Bees LC <sub>50</sub> /EC <sub>50</sub> (Contact)	> 100 µg/bee
Invertebrates (Water Flea) LC <sub>50</sub> /EC <sub>50</sub>	52 ppm
Fish (Trout) 96-hr LC <sub>50</sub> /EC <sub>50</sub>	12 ppm
Fish (Fathead) 96-hr LC <sub>50</sub> /EC <sub>50</sub>	20 ppm
Birds (8-day Dietary - Bobwhite Quail) LC <sub>50</sub> /EC <sub>50</sub>	> 5,970 ppm
Birds (8-day Dietary - Mallard Duck) LC <sub>50</sub> /EC <sub>50</sub>	> 5,970 ppm

### Eco-Chronic Toxicity

Clodinafop-Propargyl:

Invertebrates (Water Flea) 21-Day NOEC	0.23 mg/L
Fish (Trout) 21-Day NOEC	0.15 mg/L

Pinoxaden Technical:

Invertebrates (Water Flea) 21-day NOEC	5.87 ppm
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**Environmental Fate**

The active ingredient clodinafop propargyl has a low bioaccumulation potential, low to moderate mobility in soil, and is not persistent in soil or water.

The active ingredient pinoxaden degrades rapidly in the environment and does not bioaccumulate.

**SECTION – 13: DISPOSAL CONSIDERATIONS**

**Waste disposal information:** Do not reuse empty containers unless they are specifically designed to be re-filled. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

**SECTION – 14 : TRANSPORT INFORMATION****Shipping information such as shipping classification:**

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL

Not Regulated.

**SECTION – 15: REGULATORY INFORMATION****WHMIS classification for product:** Exempt

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Pest Control Products (PCP) Act Registration No.: 31674

**SECTION – 16: OTHER INFORMATION**

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

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