



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Truslate® PRO Herbicide

EPA Reg. No.: 71368-88

Product Type: Herbicide

Company Name: Nufarm Inc.
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some 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 Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide.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.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

| | |
|---------------------|-------------|
| Eye Irritation | Category 2A |
| Aspiration Toxicity | Category 1 |
| Carcinogen | Category 2 |

ENVIRONMENTAL HAZARDS:

| | |
|---|------------|
| Hazardous to aquatic environment, acute | Category 1 |
| Hazardous to aquatic environment, chronic | Category 1 |

SIGNAL WORD:

DANGER

HAZARD STATEMENTS:

Causes serious eye irritation. May be fatal if swallowed and enters airways. Suspected of causing cancer. Very toxic to aquatic life with long lasting effects.



PRECAUTIONARY STATEMENTS

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves and eye protection. Use personal protective equipment as required. Avoid release to the environment.

IF exposed or concerned: Get medical advice. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. Collect spillage.

Store locked up. Store in a well-ventilated place. Keep cool.

Dispose of contents in accordance with local, state, and federal regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | % BY WEIGHT |
|--|--------------|--------------|
| 2-methyl-4-chlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester | 29450-45-1 | 31.7 – 33.7 |
| Fluroxypyr methylheptyl ester | 81406-37-3 | 10 – 11.1 |
| Clopyralid Acid | 1702-17-6 | 5.5 – 6.0 |
| Solvent Naphtha (Petroleum), Heavy Aromatic | 64742-94-5 | 30.5 – 32.5 |
| Naphthalene | 91-20-3 | <1 |
| Other Ingredients | Trade Secret | Trade Secret |

Synonyms: Mixture of MCPA, Clopyralid, and Fluroxypyr

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

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Get medical attention if irritation occurs and persists.

If Swallowed: DO NOT induce vomiting. Get immediate medical attention.

If Inhaled: Move person to fresh air. If breathing is difficult, administer oxygen. If symptoms develop, get medical advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin with plenty of water for several minutes. If irritation or symptoms occur, get medical advice.

Most important symptoms/effects, acute and delayed: Causes eye irritation. May be harmful if swallowed or in contact with skin. Aspiration hazard – may be fatal if swallowed and enter airways.

Indication of immediate medical attention and special treatment needed, if necessary: Get immediate medical attention for ingestion. Suspected of causing cancer.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride and oxides of nitrogen and carbon.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING:

Avoid contact with skin, eyes or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets

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inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Always store pesticides in a secured warehouse or storage building. Containers should be opened in well-ventilated area. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves made of barrier laminate, nitrile rubber, neoprene rubber, or viton. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

| Component | OSHA | | ACGIH | | Unit |
|--|------|------|--------------|------|------|
| | TWA | STEL | TWA | STEL | |
| MCPA 2-EHE | NE | NE | NE | NE | |
| Fluroxypyr methylheptyl ester | NE | NE | NE | NE | |
| Clopyralid | NE | NE | NE | NE | |
| Solvent Naphtha (Petroleum), Heavy Aromatic* | NE | NE | NE | NE | |
| Napthalene | 10 | 15 | 10 (Skin) | NE | ppm |
| Other Ingredients | NE | NE | NE | NE | |

* 15 ppm Manufacturer's OEL

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|---------------------------------|
| Appearance: | Dark amber liquid |
| Odor: | Pungent |
| Odor threshold: | No data available |
| pH: | 2.54 (1% w/w dispersion in DIW) |
| Melting point/freezing point: | No data available |
| Initial boiling point and boiling range | No data available |
| Flash point: | 204.8° F (96° C) Pensky-Martens |
| Evaporation rate: | No data available |
| Flammability (solid, gas): | No data available |
| Upper/lower flammability or explosive limits: | No data available |
| Vapor pressure: | No data available |
| Vapor density: | No data available |
| Relative density: | 1.065 g/cc @ 20° C |
| Solubility(ies): | No data available |
| Partition coefficient: n-octanol/water: | No data available |
| Autoignition temperature: | No data available |
| Decomposition temperature: | No data available |

Viscosity:

21.219 cSt @ 20° C, 9.097 cSt @ 40° C

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride and oxides of nitrogen and carbon.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye contact, Skin Contact

Symptoms of Exposure:

Eye Contact: Causes substantial but temporary eye injury. Vapors and mist may cause irritation.

Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.

Ingestion: May be harmful if swallowed. The petroleum hydrocarbon component, if aspirated into the respiratory system during ingestion or vomiting may cause mild or severe pulmonary injury, possibly progressing to death.

Inhalation: Low inhalation toxicity. Overexposure to petroleum hydrocarbon component may cause irritation to respiratory tract, headaches, anaesthesia, drowsiness, unconsciousness and other central nervous system effects, possibly including death.

Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:

Data from laboratory studies on this product are summarized below:

Oral: Rat LD₅₀: 3,129 mg/kg

Dermal: Rabbit LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.10 mg/l (no mortality at highest dose tested)

Eye Irritation: Rabbit: Moderately irritating (Maximum mean total score= 38.7 / Kay & Calendra)

Skin Irritation: Rabbit: Mildly irritating (PDII=1.7)

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods. Repeated overexposure to Fluroxypyr may cause effects to bone marrow, kidney, liver and respiratory tract. Excessive exposure to clopyralid may cause effects to liver and kidneys.

Carcinogenicity / Chronic Health Effects: The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, newer rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA. Fluroxypyr did not cause cancer in laboratory animals. Clopyralid did not cause cancer in laboratory animal studies. The hydrocarbon component contains naphthalene, which is listed by IARC as a class 2B and the U.S. National Toxicology Program as reasonably anticipated to be a human carcinogen.

Reproductive Toxicity: MCPA studies in laboratory animals have shown testicular effects and lower male fertility. In animal studies, fluroxypyr has been shown not to interfere with reproduction. In animal studies, clopyralid did not interfere with reproduction.

Developmental Toxicity: MCPA studies in laboratory animals have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. Fluroxypyr did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects in the mother. Clopyralid caused birth defects in test animals, but only at exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that MCPA is not mutagenic. Animal tests with fluroxypyr did not demonstrate mutagenic effects. *In-vitro* and animal genetic toxicity studies with clopyralid were negative.

Assessment Carcinogenicity:

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This product contains substances that are considered to be probable or suspected human carcinogens as follows:

| Component | Regulatory Agency Listing As Carcinogen | | | |
|---|---|------|-----|------|
| | ACGIH | IARC | NTP | OSHA |
| Chlorophenoxy Herbicides (MCPA) | No | 2B | No | No |
| Fluroxypyr | No | No | No | No |
| Clopyralid Acid | No | No | No | No |
| Solvent Naphtha (Petroleum), Heavy Aromatic | No | No | No | No |
| Napthalene | A3 | 2B | R | No |
| Other Ingredients | No | No | No | No |

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on MCPA 2EHE:

| | | | |
|---|----------------|---|------------|
| 96-hour LC ₅₀ Bluegill: | 3.9 ± 0.7 mg/l | Bobwhite Quail Dietary LC ₅₀ : | >5,620 ppm |
| 96-hour LC ₅₀ Rainbow Trout: | 3.2 mg/l | Mallard Duck 8-day Dietary LC ₅₀ : | >5,620 ppm |
| 48-hour EC ₅₀ Daphnia: | 0.28 mg/l | | |

Data on Fluroxypyr 1-Methylheptyl Ester:

Fluroxypyr 1-Methylheptyl Ester is highly toxic to aquatic invertebrates on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L). Concentrations for fish were not determined because they exceed water solubility. Fluroxypyr 1-Methylheptyl Ester is highly insoluble in water. Fluroxypyr 1-Methylheptyl Ester is practically non-toxic to birds on an acute and dietary basis (LD₅₀ >2,000 mg/kg and LC₅₀ >5,000 ppm).

Data on Clopyralid Acid Technical:

| | | | |
|---|------------|---|-------------|
| 96-hour LC ₅₀ Bluegill: | 125 mg/l | Bobwhite Quail 8-day Dietary LC ₅₀ : | >4,640 ppm |
| 96-hour LC ₅₀ Rainbow Trout: | 104 mg/l | Mallard Duck Oral LD ₅₀ : | 1,465 mg/kg |
| 48-hour EC ₅₀ Daphnia: | 232 mg/l | Mallard Duck 8-day Dietary LC ₅₀ : | >4,640 ppm |
| Honey Bee Oral LD ₅₀ : | 100 µg/bee | | |

Environmental Fate:

MCPA 2EHE is rapidly de-esterified to parent MCPA acid in the environment. In soil, MCPA is microbially degraded with a typical half-life of approximately 10 to 14 days. In laboratory and field studies, Fluroxypyr 1-Methylheptyl Ester rapidly de-esterified to parent acid in the environment. The typical soil half-life for fluroxypyr (acid and ester) ranged from one to four weeks. Microbial metabolism is the primary degradation mechanism in soil. The typical aquatic half-life ranged from 4 to 14 days. The bioconcentration for clopyralid is low (BCF <100 or Log Pow <3). Potential for mobility in the soil is very high (Koc between 0 and 50). Biodegradation under aerobic laboratory conditions is below detectable limits. Under aerobic soil conditions, the half-life of clopyralid is 71 days. Clopyralid is not significantly degraded by sunlight.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

If container is damaged or if pesticide has leaked contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed labeled container for proper disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Containers larger than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this SDS.

DOT:

<119 gallons per completed package

Non-Regulated

≥119 gallons per completed package

UN 3082, Environmentally hazardous substances, liquid, n.o.s. (MCPA ester, Fluroxypyr ester), 9, III, Marine Pollutant

IMDG:

UN 3082, Environmentally hazardous substances, liquid, n.o.s. (MCPA ester, Fluroxypyr ester), 9, III, Marine Pollutant

IATA:

UN 3082, Environmentally hazardous substances, liquid, n.o.s. (MCPA ester, Fluroxypyr ester), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

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 chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370.66):

Acute Health, Chronic Health, Fire Hazard

Section 313 Toxic Chemical(s):

Naphthalene

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Reportable Quantity (RQ) under U.S. CERCLA:

Naphthalene

100 lbs

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: This product contains an ingredient known to the state of California to cause cancer.

| |
|------------------------------|
| 16. OTHER INFORMATION |
|------------------------------|

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 2 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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