Nufarm Tropotox Plus 400 Liquid Herbicide
Safety Data Sheet

Issue Date: 2017-12-21 Supersedes Date: 2017-05-17 {Reserved}

1. Identification

Product Name: **Nufarm Tropotox Plus 400 Liquid Herbicide**
PCP Registration No.: **8211**
Refer to the approved product label for handling and use instructions.
Product Type: **Herbicide**

Supplier:
Nufarm Agriculture Inc.
Suite 350, 2618 Hopewell Place NE
Calgary, Alberta, T1Y 7J7, Canada
1-800-868-5444

Telephone Numbers:
24 Hour Emergency Response Number, Chemtrec, 1-800-424-9300.
For medical emergencies, ProPharma Group, 1-877-325-1840.
For product and use information, Nufarm Agriculture Inc., 1-800-868-5444.

2. Hazard Identification

Classified according to UN GHS Version 5.

Physical Hazards:
None
Health Hazards:

Serious eye damage	Category 1
Skin irritation	Category 2
Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 5
Acute Toxicity (Inhalation)	Category 5

Environmental Hazards:
Hazardous to aquatic environment, acute Category 2
Signal Word:
DANGER
Hazard Statements:
Causes serious eye damage. Causes skin irritation. Harmful if swallowed. May be harmful in contact with skin. May be harmful if inhaled. Toxic to aquatic life.


Precautionary Statements:
Causes serious eye damage. Wear goggles or face shield during mixing/loading. Wash concentrate from skin or eyes immediately.
Causes skin irritation. May be harmful in contact with skin. Avoid contact with skin, eyes and clothing. After use, wash hands and other exposed skin. Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. Remove and wash contaminated clothing before reuse.
Avoid breathing spray mist. Harmful if swallowed.

3. Composition / Information on Ingredients

Hazardous Components	CAS No.	Wt. %
MCPB-sodium	6062-26-6	31-33 (as MCPB)
Chemical Synonyms: MCPB Na; sodium 4-(4-chloro-2-methylphenoxy)butanoate		
MCPA-potassium	5221-16-9	2-3 (as MCPA)
Chemical Synonyms: MCPA K; potassium 2-(4-chloro-2-methylphenoxy)acetate		

Other ingredients are considered non-hazardous.

Content as Expressed on Product Label
MCPB, present as sodium salt … 375 g a.e./L
MCPA, present as potassium salt … 25 g a.e./L

4. First Aid Measures

If swallowed, call a poison control centre 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 centre or doctor. Do not give anything by mouth to an unconscious person.
If on skin or clothing, take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.
If in eyes, hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre 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 by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

High concentrations of MCPB may cause severe irritation to the eyes. Symptoms of overexposure to MCPB could include slurred speech, twitching, jerking and spasms, drooling, low-blood pressure and unconsciousness. Treat symptomatically

5. Fire-fighting Measures

Extinguishing Media: Water fog, alcohol foam, carbon dioxide, dry chemical.
Special Firefighting Procedures: Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires. Minimize and contain water runoff.
Flash Point:..... Not determined (aqueous solution)
Conditions of Flammability:..... None
Hazardous Decomposition Products:... Under fire conditions, may produce gases such as hydrogen chloride, nitrogen oxides and carbon oxides.
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

6. Accidental Release Measures

Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

7. Handling and Storage

Handling: Avoid contact with skin, eyes and clothing. Wear goggles or face shield during mixing/loading. Wash concentrate from skin or eyes immediately. After use, wash hands and other exposed skin. Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. Remove and wash contaminated clothing before reuse.
Storage: Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. Store at temperatures above 0°C. Shake well before using.

8. Exposure Controls / Personal Protection

Engineering Controls: Use only outdoors or in a well-ventilated area.
Personal Protective Equipment: Goggles or face shield, long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.
Exposure Guidelines:

Component	TWA*	STEL**	Reference/Note
MCPB-sodium	NE	NE	None found

MCPA-potassium	NE	NE	None found

*Time-weighted Average, 8-hour unless otherwise noted.
**Short Term Exposure Limit
NE = Not Established
Refer to approved product label for additional exposure control guidance.

9. Physical and Chemical Properties

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. If no value is determined for the formulation, the value listed is the most relevant value of the predominant ingredient(s).

Appearance (physical state, colour, etc.) ..... dark brown liquid
Odour ..... phenolic amine
Odour threshold ..... not available
pH ..... 8 - 10
Melting point / Freezing point ..... not available
Initial boiling point and boiling range ..... not available
Flash point ..... not determined, aqueous solution
Evaporation rate ..... not available
Flammability (solids, gases) ..... not applicable
Upper / Lower flammability or explosive limits ... not applicable
Vapour pressure ..... not available
Vapour density ..... not available
Relative density ..... 1.17 @ 20C
Solubility(ies) ..... highly soluble in water
Partition coefficient: n-octanol/water ..... not applicable
Autoignition temperature ..... not applicable
Decomposition temperature ..... not available
Viscosity ..... not available

10. Stability and Reactivity

Reactivity: Not reactive.
Chemical Stability: Stable under normal handling and storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Excessive heat. Do not store near heat or flame.
Incompatible Materials: Avoid contact with strong acidic, basic or oxidizing agents.
Hazardous Decomposition Products: Under fire conditions, may produce gases such as hydrogen chloride, nitrogen oxides and carbon oxides.

11. Toxicological Information

Likely routes of exposure: Inhalation, ingestion, skin and eye contact.

Symptoms of overexposure to MCPB could include slurred speech, twitching, jerking and spasms, drooling, low-blood pressure and unconsciousness.
Eye contact: Causes severe eye irritation / corrosion. Causes redness and tearing.
Skin contact: Causes skin irritation.
Ingestion: May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, weakness and central nervous system depression.
Inhalation: Contains materials that may be moderately toxic. Vapours could cause headache, nausea, dizziness and respiratory irritation if inhaled.
Medical Conditions Aggravated by Exposure: Skin exposure may aggravate preexisting skin conditions. Inhalation of mist may aggravate preexisting respiratory conditions.
Toxicological Data:
Data are from laboratory studies conducted on similar products.

Acute oral LD_{50} (mg/kg) ..... 500-2000 (Rat)
Acute dermal LD_{50} (mg/kg) ..... >2000 (Rat)
Acute inhalation LC_{50} (mg/l) ..... >5.52 (Rat, 4-hour, nose only exposure, MCPB acid)
Skin corrosion/irritation ..... Considered as irritating to the skin (Rabbit)
Serious eye damage/irritation ..... Considered as severely irritating / corrosive to the eye (Rabbit)
Respiratory or skin sensitization ... Not considered a skin sensitizer
Germ cell mutagenicity ..... The weight of evidence is that MCPB and MCPA are not genotoxic.
Carcinogenicity ..... The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as possibly carcinogenic to humans (Group 2B), the category for limited evidence for carcinogenicity in humans. The potential effects from chronic exposure to MCPB were assessed using long-term animal feeding studies with MCPA. MCPA was not carcinogenic to rats or mice in lifetime feeding studies.
Reproductive toxicity ..... Animal reproduction studies indicate there is no increased sensitivity of the young relative to maternal animals.

12. Ecological Information

Ecotoxicity:
Data are from laboratory studies conducted on MCPB-sodium, or as noted.
Aquatic Invertebrate: 48-Hour EC_{50} (mg/L) ..... 55 (*Daphnia*) (50.1 mg/L as MCPB acid)
Fish: 96-Hour LC_{50} (mg/L) ..... 4.3 (Rainbow Trout), 14 (Bluegill Sunfish)
Algae: 72-Hour EC_{50} (mg/L) ..... 41 (*Selenastrum*), 4.3 (*Navicula*), >2 (*Anabaena*) (120-Hour)
Birds: Oral LD_{50} (mg/kg) ..... 282 (Bobwhite Quail), 8-Day Dietary LC_{50} >5000 ppm (Mallard Duck and Bobwhite Quail)
Bees: Contact LD_{50} ..... >25 µg/bee

Data are from laboratory studies conducted on MCPA acid.
Aquatic Invertebrate: 48-Hour EC_{50} (mg/L) ..... >190 (*Daphnia*)
Fish: 96-Hour LC_{50} (mg/L) ..... 50-560 (Rainbow Trout), >150 (Bluegill Sunfish)
Algae: 72-Hour EC_{50} (mg/L) ..... >392 (*Selenastrum*)

Birds: Oral LD_{50} (mg/kg) ..... 377 (Bobwhite Quail), 5-Day Dietary LC_{50} >5620 ppm (Mallard Duck and Bobwhite Quail)
Bees: Oral and Contact LD_{50} ..... >200 µg/bee

Persistence and Degradability: Both the MCPB and MCPA salts rapidly dissociate to their parent acids in the environment. MCPB is transformed by microorganisms under both anaerobic and aerobic conditions to MCPA with a typical DT_{50} of approximately 8 days. In soil, MCPA is microbially degraded with typical half-life of approximately 10 to 14 days.
Mobility in Soil: Moderate to high mobility potential, but rapidly degraded.
Bioaccumulation Potential: Negligible.

13. Disposal Considerations

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations.

Do not reuse container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site. Contact local distributor, dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

14. Transport Information

Canadian TDG Description (Road & Rail): Not regulated for transport by road/rail.

United States:
DOT Description:
Non Regulated

IMDG
Non Regulated

IATA
Non Regulated

15. Regulatory Information

Pest Control Products Act Registration Number: 8211

OPAC Schedule: …. 4

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control product label:

WARNING POISON
EYE IRRITANT
Warning, contains the allergen caseinate (milk)

WHMIS exempt.

16. Other Information

This Safety Data Sheet (SDS) is designed to comply with the Globally Harmonized System (GHS) of classification, and the *Hazardous Products Regulations*.

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. The product labeling provides that information specifically for product use as intended.

Company and published information is used in the development of this SDS. The information herein is presented in good faith and believed accurate at the date of publication. However, no warranty, expressed or implied, is given.

Revisions to the last issue: Addition of PMRA guidance info to Section 15.

Issue Date: 2017-12-21 Supersedes Date: 2017-05-17