



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Trooper™ Extra Selective Herbicide
EPA Reg. No.: 228-586
Product Type: Herbicide

Company Name: Nufarm Americas, 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 exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

For EPA FIFRA-Specific Information see Section 15

HEALTH HAZARDS:

Acute toxicity, oral	Category 4
Eye Irritation	Category 2B

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 3

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if swallowed. Causes eye irritation. Toxic to aquatic life. Harmful to aquatic life with long-lasting effects.



PRECAUTIONARY STATEMENTS

Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. 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.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
2,4-Dichlorophenoxyacetic Acid, Triisopropanolamine Salt	32341-80-3	39.6
Picloram, Triisopropanolamine Salt	6753-47-5	10.2
Dicamba Acid	1918-00-9	5.7
Ethylenediaminetetraacetic acid (EDTA)	60-00-4	2.0
Other ingredients (trade secrets)		42.5

Synonyms: Mixture of 2,4-D, Picloram and Dicamba

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 with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin with plenty of water. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. Call a poison control center or doctor for further treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor.

Most Important symptoms/effects, acute and delayed: Causes eye irritation. May cause slight skin irritation. Harmful if swallowed.

Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention should not be required.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

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, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

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

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: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container 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: Do not get in eyes or on clothing or skin. 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 inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: 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 face shield, goggles or safety glasses with front, brow and temple protection. 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. 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	
TIPA Salt of 2,4-D	10*	NE	10*	NE	mg/m ³
Picloram Acid	15 (T) 5 (R)	NE	10	NE	mg/m ³
Dicamba Acid	NE	NE	NE	NE	
EDTA	NE	NE	NE	NE	

*Based on adopted limit for 2,4-D Acid
T = Total Dust

NE = Not Established
R = Respirable Fraction

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber to brown liquid
Odor:	Faint odor
Odor threshold:	No data available
pH:	5 - 7
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available

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:	1.210 g/mL
Solubility(ies):	Miscible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	282.005 cSt (@ 20°C) 73.986 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 normally reactive.

Chemical Stability: This material is 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: Strong oxidizing agents: bases and acids.

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

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation

Symptoms of Exposure:

Eye Contact: Mildly irritating based on toxicity studies.

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

Ingestion: Harmful if ingested based on toxicity studies.

Inhalation: Low inhalation toxicity based on toxicity studies.

Delayed, immediate and chronic effects of exposure:

Toxicological Data:

Data from laboratory studies conducted are summarized below:

Oral: Rat LD₅₀: 1,030 mg/kg (female rats)

Dermal: Rat LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.02 mg/L (No mortalities at the highest dose tested)

Eye Irritation: Rabbit: Moderately irritating (MMTS = 39.0)

Skin Irritation: Rabbit: Slightly irritating (PDII = 1.1)

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 picloram may affect the liver. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to phenoxy herbicides can cause liver, kidney and muscle damage. 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, more current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic potential. Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity). Picloram acid did not cause cancer in laboratory animals.

Reproductive Toxicity: No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animal studies. Neither Picloram acid nor Dicamba interfered with fertility in reproduction studies in laboratory animals.

Developmental Toxicity: Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. Picloram acid did not cause birth defects or any other fetal effects in laboratory animals, even at exposure level having an adverse effect on the mother. Animal tests with dicamba have not demonstrated developmental effects.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic. The preponderance of data shows picloram to be non-mutagenic in *in-vitro* tests and in animal studies. Animal tests with dicamba did not demonstrate mutagenic effects.

Assessment Carcinogenicity:

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	No	2B	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on TIPA Salt of 2,4-D Acid:

Bluegill Acute LC ₅₀ :	432 mg/l	Pink Shrimp Acute LC ₅₀ :	744 mg/l
Rainbow Trout Acute LC ₅₀ :	317 mg/l	Tidewater Silverside Acute LC ₅₀ :	376 mg/l
Daphnia Acute LC ₅₀ :	748 mg/l	Growth Inhibition EC ₅₀ Green Algae:	103 mg/l

Data on Picloram TIPA Salt:

Rainbow Trout Acute LC ₅₀ :	25 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
Honey Bee Contact LD ₅₀ :	>100 mg/bee	Mallard Duck 8-day Dietary LC ₅₀ :	>10,000 ppm
Tidewater Silverside Acute LC ₅₀ :	57.2 mg/l	Growth Inhibition EC ₅₀ Blue-Green Algae:	740 mg/l
Oyster, Shell deposition EC ₅₀ :	10-18 mg/l		

Data on Dicamba:

96-hour LC ₅₀ Bluegill:	135 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	135 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>10,000 ppm
48-hour EC ₅₀ Daphnia:	110 mg/l		

Environmental Fate:

In laboratory and field studies, TIPA salt of 2,4-D acid salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks. In laboratory and field studies, TIPA salt of Picloram acid rapidly dissociated to parent acid in the environment. However, Picloram may be present in ionized form at environmental pH contributing to high solubility in water and high potential mobility in soils. Picloram variably binds to organic materials in the soils with adsorption increasing as the levels of organic matter and clay increase. It is stable to hydrolysis and anaerobic degradation processes. Under aerobic soil conditions the typical half-life ranges from 167 - 513 days, but may be as little as 30-90 days in the presence of adequate soil moisture and warm temperatures. Photolysis half-life ranges from 2.3 - 9.58 days and is a secondary route of degradation. Dicamba poorly binds to soil particles, is potentially mobile in the soil and highly soluble in water. Aerobic soil metabolism is the main degradative process for dicamba with a typical half-life of 2 weeks. Degradation is slower when low soil moisture limits microbe populations. In water, microbial degradation is the main route of dicamba dissipation. Aquatic hydrolysis, volatilization, adsorption to sediments, and bioconcentration are not expected to be significant.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal:

Plastic Containers: Do not reuse container. Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Metal Containers: Do not reuse container. Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

14. TRANSPORTATION INFORMATION**DOT****≤ 25 gallons per complete package**

Non Regulated – See 49 CFR 173.132(b)(3) & 172.101 Appendix A

> 25 gallons per complete package

RQ, UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2,4 DICHLOROPHENOXYACETIC ACID), 9, III

IMDG

Non Regulated – See IMDG 2.6.2.1.3

IATA

Non Regulated – See IATA 3.6.1.5.3

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.

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. 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):

Acute Health

Section 313 Toxic Chemical(s):

Dicamba (CAS No. 1918-00-9), 10.05-11.10% equivalent by weight in product

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

Dicamba (CAS No. 1918-00-9) 1,000 pounds

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: Not Listed.

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.

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