



Nufarm 2,4-D Amine 600 Liquid Herbicide Safety Data Sheet

Issue Date: 2017-10-04

Supersedes Date: 2017-05-17

{Reserved}

1. Identification

Product Name: Nufarm 2,4-D Amine 600 Liquid Herbicide

PCP Registration No.: 14726

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 3
Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation)	Category 4
Acute toxicity (Dermal)	Category 5

Environmental Hazards:

Hazardous to aquatic environment, acute Category 2

Signal Word:

DANGER

Hazard Statements:

Causes serious eye damage. Causes mild skin irritation. Harmful if swallowed. Harmful if inhaled. May be harmful in contact with skin. Toxic to aquatic life.



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Precautionary Statements:

Causes serious eye damage. Wear goggles or face shield during mixing/loading. Wash concentrate from skin or eyes immediately.

May be harmful in contact with skin. Causes mild skin irritation. Avoid contact with skin, eyes and clothing. After use, wash hands and other exposed skin. Wear coveralls over a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.

Remove and wash contaminated clothing before reuse.

Harmful if swallowed. Do not eat, drink or smoke when using this product.

Avoid breathing spray mist. Use only outdoors or in a well-ventilated area.

3. Composition / Information on Ingredients

Hazardous Components	CAS No.	Wt. %
2,4-D-dimethylammonium	2008-39-1	82-87
Chemical Synonyms: 2,4-D DMA; 2,4-dichlorophenoxyacetic acid, dimethylamine salt; 2-(2,4-dichlorophenoxy)acetic acid compound with <i>N</i> -methylmethanamine (1:1)		

Other ingredients are considered non-hazardous.

Content as Expressed on Product Label

2,4-D, present as dimethylamine salt ... 564 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.

In case of eye contact, 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.

No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient. 2,4-D may cause severe irritation to the eyes. Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle

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coordination. Other possible effects of overexposure included fatigue, muscle weakness or nausea. 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:..... >200 C

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. After use, wash hands and other exposed skin. Wear coveralls over a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Storage: Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. Store at temperatures above 0°C. If subjected to freezing temperatures, warm to at least 5°C and mix thoroughly. 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, coveralls, long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.

Exposure Guidelines:

Component	TWA*	STEL**	Reference/Note
2,4-D-dimethylammonium	10 mg/m ³	20 mg/m ³	Adopted limits for 2,4-D

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			acid and its esters
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*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.

Appearance (physical state, colour, etc.)	clear brown liquid
Odour	phenolic amine
Odour threshold	not available
pH	7.5 - 9
Melting point / Freezing point	not available
Initial boiling point and boiling range	not available
Flash point	>200C
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	1.2 at 20C
Solubility(ies)	72.9 g/100 mL H ₂ O, pH 7, 20C (2,4-D DMA)
Partition coefficient: n-octanol/water	not applicable
Autoignition temperature	not applicable
Decomposition temperature	c. 120C (2,4-D DMA)
Viscosity	55 cP @ 25C

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.

Eye contact: Causes severe eye irritation / corrosion. Causes redness and tearing.

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Skin contact: May be harmful if absorbed through skin. Causes slight 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 2,4-D products.

Acute oral LD₅₀ (mg/kg) 949 (Rat)

Acute dermal LD₅₀ (mg/kg) 1829 to >2000 (Rabbit)

Acute inhalation LC₅₀ (mg/l) >3.5 (Rat, 4-hour exposure)

Skin corrosion/irritation Slightly irritating to the skin (Rabbit)

Serious eye damage/irritation Severely irritating / corrosive to the eye (Rabbit)

Respiratory or skin sensitization ... Not considered a skin sensitizer

Germ cell mutagenicity *In vitro* and *in vivo* test results indicate 2,4-D is not mutagenic or genotoxic.

Carcinogenicity The International Agency for Research on Cancer (IARC) lists exposure to 2,4-D as possibly carcinogenic to humans (Group 2B), based on inadequate evidence in humans and limited evidence in animals. 2,4-D was not carcinogenic to rats or mice in lifetime feeding studies.

Reproductive toxicity 2,4-D is not considered a reproductive toxin.

12. Ecological Information

Ecotoxicity:

Data are from laboratory studies conducted on similar 2,4-D products.

Aquatic Invertebrate: 48-Hour LC₅₀ (mg a.e./L) ... 8.72 (*Cyclops vernalis*), 100 (*Daphnia*)

Fish: 96-Hour LC₅₀ (mg a.e./L) .. 240 (Rainbow Trt), 40 (Bluegill), 118 (Atlantic Silverside)

Algae: EC₅₀ (mg a.e./L) 51.2 (*Selenastrum*), 4.67 (*Navicula*)

Birds: Oral LD₅₀ (mg/kg) 500 (Bobwhite Quail); 5-d Dietary LC₅₀ >5620 ppm (Mallard)

Bees: LD₅₀ >100 µg/bee (contact), c. 94 µg/bee (oral)

Persistence and Degradability: 2,4-D DMA rapidly dissociates to parent 2,4-D in the environment. In soil, 2,4-D is microbially degraded with typical half-life of approximately 5 to 10 days. Persistent in anaerobic environments.

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.

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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):

UN 3082, Environmentally hazardous substance, liquid, n.o.s.
(2,4-D Salt), 9, III, Marine Pollutant.

Section 1.45.1 of the TDG Regulations provides an exemption from documentation and safety marks only for this product and only when transported by a road or railway vehicle.

United States:

DOT Description:

< 25 gallons per complete package

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

≥ 25 but < 119 gallons per complete package

UN 3082, Environmentally hazardous substance, liquid, n.o.s.
(2,4-D Salt), 9, III, RQ

≥ 119 gallons per complete package

UN 3082, Environmentally hazardous substance, liquid, n.o.s.
(2,4-D Salt), 9, III, RQ, Marine Pollutant

IMDG

UN 3082, Environmentally hazardous substance, liquid, n.o.s.
(2,4-D Salt), 9, III, Marine Pollutant

IATA

UN 3082, Environmentally hazardous substance, liquid, n.o.s.
(2,4-D Salt), 9, III, Marine Pollutant

15. Regulatory Information

Pest Control Products Act Registration Number: 14726

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OPAC Schedule: 3

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

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.

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