



## BlackHawk Herbicide Safety Data Sheet

Issue Date: 2017-12-20

Supersedes Date: 2017-05-17

### 1. Identification

**Product Name:** BlackHawk Herbicide

**PCP Registration No.:** 32111

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:**

Flammable liquid                      Category 4

**Health Hazards:**

Acute toxicity (Oral)                      Category 4

Acute toxicity (Dermal)                      Category 5

Acute toxicity (Inhalation)                      Category 5

Skin irritation                      Category 3

Skin sensitizer                      Category 1B

**Environmental Hazards:**

Hazardous to aquatic environment, acute                      Category 1

**Signal Word:**

WARNING

**Hazard Statements:**

Combustible liquid. Harmful if swallowed. May be harmful in contact with skin. May be harmful if inhaled. Causes mild skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life.

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**Precautionary Statements:**

Keep away from flames and hot surfaces.

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. Avoid breathing spray mist. Harmful if swallowed.

This product contains an active ingredient and aromatic petroleum distillates which are toxic to aquatic organisms.

**3. Composition / Information on Ingredients**

Hazardous Components	CAS No.	Wt. %
2,4-D-2-ethylhexyl ester	1928-43-4	65-69
Chemical Synonyms: 2,4-D 2EH; 2-ethylhexyl 2-(2,4-dichlorophenoxy)acetate; 2-ethylhexyl (2,4-dichlorophenoxy)acetate		
Solvent naphtha (petroleum), heavy aromatic, naphthalene depleted	64742-94-5	21-23
1-methyl-2-pyrrolidinone	872-50-4	2.4-2.6
Chemical Synonyms: NMP; N-Methylpyrrolidone; N-Methylpyrrolidinone		
Pyraflufen-ethyl	129630-19-9	0.5-0.6
Chemical Synonyms: ethyl [2-chloro-5-(4-chloro-5-difluoromethoxy-1-methylpyrazol-3-yl)-4-fluorophenoxy]acetate; ethyl 2-[2-chloro-5-[4-chloro-5-(difluoromethoxy)-1-methyl-1H-pyrazol-3-yl]-4-fluorophenoxy]acetate		

Other ingredients are not hazardous.

Content as Expressed on Product Label
2,4-D, present as the 2-ethylhexyl ester ... 473 g a.e./L
Pyraflufen-ethyl ... 6.1 g/L

**4. First Aid Measures**

**If swallowed**, call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. 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.

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**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.

**Note to physician:** Treat symptomatically. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. No specific antidote. Employ supportive care. This product may cause mild irritation to the eyes.

Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness or nausea.

## 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:**..... 66.8 C

**Conditions of Flammability:** ..... Combustible liquid. May burn under fire conditions.

**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: 1      Flammability: 2      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 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.

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**Storage:** Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. Storage below 0C will not impair the effectiveness of the product, however, if frozen, return to original state by allowing product to warm to 10 - 20C and agitate thoroughly before use.

<b>8. Exposure Controls / Personal Protection</b>
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**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-2-ethylhexyl ester	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>	Based on adopted limit for 2,4-D
Solvent naphtha (petroleum), heavy aromatic, naphthalene depleted	50 mg/m <sup>3</sup>	NE	Supplier recommendation
1-methyl-2-pyrrolidinone	10 ppm	NE	AIHA recommendation
Pyraflufen-ethyl	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.

<b>9. Physical and Chemical Properties</b>
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**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.)** ..... clear amber liquid  
**Odour** ..... hydrocarbon-like  
**Odour threshold** ..... not available  
**pH** ..... 3.9 (1% w/w dilution)  
**Melting point / Freezing point** ..... not available  
**Initial boiling point and boiling range** ..... >300°C (decomposition, 2,4-D 2-EHE)  
**Flash point** ..... 66.8 °C  
**Evaporation rate** ..... <0.01 (n-butyl acetate = 1) (solvent)  
**Flammability (solids, gases)** ..... not applicable  
**Upper / Lower flammability or explosive limits** ... LEL = 0.7, UEL = 5.6 vol. % in air (solvent)  
**Vapour pressure** ..... 3.6 x 10<sup>-6</sup> mm Hg @ 25°C (2,4-D 2-EHE)  
**Vapour density** ..... 5.6 @ 101 kPa (air = 1) (solvent)  
**Relative density** ..... 1.098  
**Solubility(ies)** ..... product is emulsifiable in water  
**Partition coefficient: n-octanol/water** ..... product is oil soluble

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**Autoignition temperature** ..... not available  
**Decomposition temperature** ..... >300°C (2,4-D 2-EHE)  
**Viscosity** ..... 25 mPa(s) @ 20C

## 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.

Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness or nausea.

**Eye contact:** Causes mild eye irritation. Causes redness and tearing.

**Skin contact:** May be harmful if absorbed through skin. Causes mild skin irritation. May cause an allergic skin reaction.

**Ingestion:** Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

**Inhalation:** May be harmful if inhaled. 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:

**Acute oral LD<sub>50</sub> (mg/kg)** ..... 565 (Rat, female)

**Acute dermal LD<sub>50</sub> (mg/kg)** ..... > 2000 (Rat, male & female)

**Acute inhalation LC<sub>50</sub> (mg/l)** ..... > 5.06 mg/L (Rat, male & female, 4-hour, nose-only exp.)

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

**Serious eye damage/irritation** ..... Mildly irritating to the eye (Rabbit)

**Respiratory or skin sensitization** ... Potential skin sensitizer

**Germ cell mutagenicity** ..... The weight of evidence is that 2,4-D is not mutagenic. Pyraflufen-ethyl has not demonstrated genotoxic potential in *in vitro* and *in vivo* assays.

**Carcinogenicity** ..... The International Agency for Research on Cancer (IARC) lists exposure to 2,4-D as a class 2B carcinogen, the category for possible carcinogenicity in humans. Rat and mouse lifetime feeding studies did not show carcinogenic potential for 2,4-D. Pyraflufen-ethyl did not demonstrate oncogenicity in rats, but there were equivocal findings in mice. Relevance to humans is not known.

**Reproductive toxicity** ..... Animal reproduction studies with both 2,4-D and

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pyraflufen-ethyl indicate there is no increased sensitivity of the young relative to maternal animals.

## **12. Ecological Information**

### **Ecotoxicity:**

Data are from laboratory studies conducted on 2,4-D-2-ethylhexyl technical.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... 5.2 (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg/L) ..... 7.2 (Rainbow Trt), > 5 (Bluegill), 0.24 (Silverside)

**Algae:** EC<sub>50</sub> (mg ae/L) ..... > 30 (*Selenastrum*), 4.1 (*Navicula*), 0.23 (*Skeletonema*)

**Birds:** Oral LD<sub>50</sub> (mg/kg) ..... 663 (Mallard), Dietary LC<sub>50</sub> > 5620 (Mallard, Bobwhite)

**Bees:** Oral and Contact LD<sub>50</sub> ..... > 100 µg/bee

Data are from laboratory studies conducted on pyraflufen-ethyl technical.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... > 0.082 (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg ae/L) .... > 0.1 (Rainbow Trt), > 0.085 (Bluegill), > 0.056 (Sheepshead)

**Algae:** EC<sub>50</sub> (mg/L) ..... 0.00031 (*Selenastrum*), 0.0016 (*Navicula*)

**Birds:** Oral LD<sub>50</sub> (mg/kg) ..... > 2000 (Bobwhite), Dietary LC<sub>50</sub> > 5000 (Mallard, Bobwhite)

**Bees:** Oral and Contact LD<sub>50</sub> ..... > 112 µg/bee (oral), > 100 µg/bee (contact)

**Persistence and Degradability:** In aerobic soil and water, 2,4-D 2EH is rapidly hydrolysed to 2,4-D acid, DT<sub>50</sub> <1 day. 2,4-D is microbially degraded with typical half-life (ester and acid) of 5 to 10 days. Persistent in anaerobic environments. Pyraflufen-ethyl dissipates quickly by biotransformation in both soil and water, having a half-life of less than one day. Some transformation products of pyraflufen-ethyl are persistent.

**Mobility in Soil:** 2,4-D has moderate to high mobility potential, but is rapidly degraded. Transformation products of pyraflufen-ethyl are immobile.

**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.

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#### **14. Transport Information**

##### **Canadian TDG Description (Road & Rail):**

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (2,4-D Ester, pyraflufen-ethyl), Class 9, PG 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.

##### **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 Ester), 9, III, RQ

###### **≥ 119 gallons per complete package**

NA 1993, Combustible, liquid, n.o.s.  
(2,4-D Ester, Napthalene), 3, III, RQ, Marine Pollutant

##### **IMDG**

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

##### **IATA**

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

#### **15. Regulatory Information**

*Pest Control Products Act* Registration Number: ..... 32111

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:

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DANGER POISON  
SKIN AND EYE IRRITANT  
POTENTIAL SKIN SENSITIZER

This product is regulated under the *Pest Control Products Act (PCPA)*. Some classifications on this SDS may differ from the PCPA registered label. Refer to the approved product label for handling and use instructions.

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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