



Epic Herbicide Safety Data Sheet

Issue Date: 2020-02-04

Supersedes Date: 2020-01-07

{Reserved}

1. Identification

Product Name: Epic Herbicide

PCP Registration No.: 33603

Refer to the approved product label for handling and use instructions.

Product Type: Herbicide

Supplier: Nufarm Agriculture Inc.
5101, 333 - 96th Ave NE
Calgary, Alberta T3K 0S3, 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:

Eye irritation - Category 2A

Reproductive toxicity - Category 1B

Specific target organ toxicity - repeated exposure - Category 2 (urinary system, liver)

Aspiration hazard - Category 1

Signal Word:

DANGER

Hazard Statements:

H227 Combustible liquid.

H304 May be fatal if swallowed and enters airways. H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H360 May damage fertility or the unborn child.

H373 May cause damage to organs (Urinary system, Liver) through prolonged or repeated exposure.

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Precautionary Statements:

- P201 – Obtain special instructions before use.
- P202 – Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 – Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 – Wash thoroughly after handling.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.

3. Composition / Information on Ingredients

Hazardous Components	CAS No.	Wt. %
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 30 - < 60
tetrahydro-2-furyl-methanol	97-99-4	>= 10 - < 30
pinoxaden (ISO)	243973-20-8	9.7087
cloquintocet-mexyl	99607-70-2	>= 1 - < 5
naphthalene	91-20-3	>= 0.1 - < 1

Actual concentration or concentration range is withheld as a trade secret

4. First Aid Measures

General advice: Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If swallowed, If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

If on skin or clothing, Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

If in eyes, Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

If inhaled, Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.

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

Note to physician: No specific antidote. Treat symptomatically. Contains petroleum distillates, vomiting may cause aspiration pneumonia.

5. Fire-fighting Measures

Extinguishing Media: Small fires - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Large fires - Alcohol-resistant foam.

Do not use a solid water stream as it may scatter and spread the fire.

Special Firefighting Procedures: As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health. Flash back possible over considerable distance. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray. Wear full protective clothing and self-contained breathing apparatus.

Flash Point:..... 79°C

6. Accidental Release Measures

Personal Precautions: Refer to protective measures listed in sections 7 and 8. Keep people away from and upwind of spill/leak. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Remove all sources of ignition. Pay attention to flashback.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

Procedures for dealing with release or spill: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

7. Handling and Storage

Handling: Avoid contact with skin and eyes. When using do not eat, drink or smoke. Use only in an area containing flame proof equipment. Take precautionary measures against static discharges. For personal protection see section 8.

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from combustible material. Keep in an area equipped with sprinklers. Keep away from food, drink and animal feedingstuffs. No smoking. Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

8. Exposure Controls / Personal Protection

Engineering Controls:

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

CONSULT THE PRODUCT LABEL FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.

Personal protective equipment for each exposure route:

General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, applying cosmetics or using tobacco.

INGESTION: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: Tightly fitting safety goggles. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

SKIN: Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Remove and wash contaminated clothing before re-use. Wear as appropriate:
Impervious clothing

INHALATION: No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	8 ppm 50 mg/m ³	Supplier
		TWA	200 mg/m ³ (total hydrocarbon vapor)	CA AB OEL

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		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
pinoxaden (ISO)	243973-20-8	TLV-C	0.1 mg/m3	Syngenta
cloquintocet-mexyl	99607-70-2	TWA	5 mg/m3	Syngenta
naphthalene	91-20-3	TWA	10 ppm	CA AB OEL
		STEL	15 ppm	CA AB OEL
		TWA	10 ppm	CA BC OEL
		TWAEV	10 ppm	CA QC OEL
		STEV	15 ppm	CA QC OEL
		TWA	10 ppm	ACGIH

9. Physical and Chemical Properties

Appearance (physical state, colour, etc.) Yellow to orange clear liquid
Odour Aromatic
Odour threshold not available
pH 3 - 7 (1% aqueous solution @ 25 °C)
Melting point / Freezing point not available / < -10 °C
Initial boiling point and boiling range not available
Flash point 79°C
Evaporation rate not available
Flammability (solids, gases) Combustible liquid (Class IIIA)
Upper / Lower flammability or explosive limits ... not available
Vapour pressure not available
Vapour density not available
Relative density 1.03 g/cm³ @ 20 °C
Solubility(ies) not available
Partition coefficient: n-octanol/water not available
Autoignition temperature 305 °C
Decomposition temperature not available
Viscosity (dynamic) 8.3 mPa.s at 20 °C
Explosive properties Not explosive
Oxidizing properties The substance or mixture is not classified as oxidizing
Surface tension 36.6 mN/m, 25 °C

10. Stability and Reactivity

Reactivity: None reasonably foreseeable.

Chemical Stability: Stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

Conditions to Avoid: No decomposition if used as directed

Incompatible Materials: No substances are known which lead to the formation of hazardous substances or thermal reactions.

Hazardous Decomposition Products: No hazardous decomposition products are known.

11. Toxicological Information

Likely Routes of Exposure: Inhalation, Skin contact, Oral

Eye Contact: Causes eye irritation.

Skin Contact: Causes skin irritation.

Ingestion: May be fatal if swallowed and enters airway.

Inhalation: Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.

Acute Toxicity/Irritation Studies (Finished Product):

Ingestion: Low Acute Toxicity Oral (LD50 Rat) > 5,000 mg/kg body weight

Dermal: Low Acute Toxicity Dermal (LD50 Rat) > 5,000 mg/kg body weight

Inhalation: Low Acute Toxicity Inhalation (LC50 Rat) > 2.53 mg/L air – 4 hours

Eye Contact: Mildly Irritating (Rabbit)

Skin Contact: Severely Irritating (Rabbit)

Skin Sensitization: Not a Sensitizer (Guinea Pig)

Subchronic (Target Organ) Effects:

Pinoxaden: Based on human evidence: may cause respiratory irritation, breathing difficulties, cough, acute irritation of the respiratory system leading to tightness of the chest and an asthmatic condition.

Cloquintocet-mexyl: Not classified as a specific target organ toxicant, single exposure.

Carcinogenicity / Chronic Health Effects:

Pinoxaden: Did not show carcinogenic effects in animal experiments. No adverse effect has been observed in chronic toxicity tests.

Cloquintocet-mexyl: Did not show carcinogenic effects in animal experiments. Classified as a specific target organ toxicant, repeated exposure, category 2.

Reproductive Toxicity:

Pinoxaden: Did not show reproductive toxicity effects in animal experiments.

Cloquintocet-mexyl: Did not show reproductive toxicity effects in animal experiments.

Developmental Toxicity: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Genotoxicity:

Pinoxaden: Did not show mutagenic effects in animal experiments.

Cloquintocet-mexyl: Did not show mutagenic effects in animal experiments.

Toxicity of Other Components:

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

Petroleum solvent: Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat and lungs. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light headedness, headache, nausea and loss of coordination.

Tetrahydrofurfuryl alcohol: May be harmful if swallowed. Causes respiratory tract irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

12. Ecological Information

Eco-Acute Toxicity:

Pinoxaden:

Invertebrates (Water Flea) 48-hour LC50/EC50 52 ppm

Fish (Rainbow Trout) 96-hour LC50/EC50 10.3 ppm

Birds (8-day dietary – Bobwhite Quail) LC50 > 5,790 ppm

Cloquintocet-mexyl:

Invertebrates (Water Flea) 48-hour LC50/EC50 > 0.82 ppm

Fish (Rainbow Trout) 96-hour LC50/EC50 > 0.97 ppm

Birds (14-day – Bobwhite Quail) LC50 > 2,000 ppm

Persistence & Degradability:

Pinoxaden: Low persistence in soil. Low persistence in water.

Cloquintocet-mexyl: Low persistence in soil. Low persistence in water.

Bioaccumulation Potential:

Pinoxaden: BCF < 500; does not bioaccumulate.

Cloquintocet-mexyl: BCF < 500; does not bioaccumulate.

Mobility in Soil:

Pinoxaden: Low mobility in soil.

Cloquintocet-mexyl: Low mobility in soil.

Other Adverse Effects: Not applicable.

Environmental Fate:

The active ingredient, pinoxaden, has a low bioaccumulation potential, low mobility, and low persistence in soil and water.

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):

UN 3082, Environmentally hazardous substance, liquid, n.o.s.,
(solvent naphtha), 9, III, Marine Pollutant

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Class 9 Exemption from Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, if transported solely on land by road vehicle or railway vehicle.

1.45.1. SOR/2008-34

United States DOT Description:

UN 3082, Environmentally hazardous substance, liquid, n.o.s.,
(solvent naphtha), 9, III, Marine Pollutant

15. Regulatory Information

Pest Control Products Act Registration Number: 33603

OPAC Schedule: N/A

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:



CAUTION POISON
WARNING: EYE AND SKIN IRRITANT

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.

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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: Updated to include Master Product information

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