



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Dagger Selective Herbicide**

EPA Reg. No.: 228-267-71368

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 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 Certain sections are superseded by federal law governed by EPA for a registered pesticide.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

PHYSICAL HAZARDS:

None identified

HEALTH HAZARDS:

Acute toxicity, dermal	Category 3
Acute toxicity, oral	Category 4
Specific target organ toxicity – Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
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SIGNAL WORD:

DANGER

HAZARD STATEMENTS:

Toxic in contact with skin. Harmful if swallowed. May cause damage to organs (liver, kidneys) through prolonged or repeated exposure. Toxic to aquatic life.



PRECAUTIONARY STATEMENTS

To avoid contact with skin, wear long pants, long-sleeved shirt, shoes plus socks and chemical-resistant gloves. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash before reuse.

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

Collect spillage.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid	29450-45-1	88 – 94
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Mixture containing 2-Ethylhexyl ester of 4-Chloro-2-methylpenoxyacetic acid; MCPA 2-EHE; MCPA IOE; MCPA 2-ethylhexyl ester; 2-methyl-4-chlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice. If symptoms develop, get medical advice.

If Swallowed: Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If symptoms develop, get medical advice.

Most important symptoms/effects: Eye exposure may cause mild irritation. Skin exposure may cause mild irritation. If ingested or absorbed through the skin, may cause diarrhea, headache, nausea, and vomiting.

Indication of immediate medical attention and special treatment needed: For ingestion there is no specific antidote available. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

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: Not classified as flammable or combustible but will burn under fire conditions. 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 hydrogen chloride and 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: Pump any free liquid into an appropriate closed container. Collect washings 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, on skin, or on clothing. 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 PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Always store pesticides in a secured warehouse or storage building. Containers should be opened in well-ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. 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 chemical goggles or shielded safety glasses.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves. Washing facilities 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	
2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark brown liquid
Odor:	Aromatic hydrocarbon
Odor threshold:	No data available
pH:	3.51 (5% w/w dispersion in DIW)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	>230° F (>110° C) Seta-flash
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:	1.055 g/mL @ 25° C
Solubility(ies):	No data available
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	28.5 cPs @ 25° C; 14.5 cPs @ 39° C

SAFETY DATA SHEET

Dagger Selective Herbicide

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: This product is not normally reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Incompatible Materials: Strong oxidizing agents: strong acids, strong bases

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: Eye contact, Skin contact

Symptoms of Exposure:

Eye Contact: Mildly irritating to eyes based on toxicity studies.

Skin Contact: Moderately toxic and mildly irritating based on toxicity studies. Overexposure by skin absorption may cause symptoms similar to those for ingestion.

Ingestion: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, weakness and central nervous system depression.

Inhalation: Low inhalation toxicity.

Delayed, immediate and chronic effects of exposure: None expected.

Toxicological Data:

Data from laboratory studies conducted on Dagger Selective Herbicide :

Oral: Rat LD₅₀: 1,372 mg/kg

Dermal: Rabbit LD₅₀: >1,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >5.0 mg/l

Eye Irritation: Rabbit: Mild irritation

Skin Irritation: Rabbit: Mild irritation (PDII=1.0)

Skin Sensitization: Guinea Pig: Not a sensitizer

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.

Carcinogenicity / Chronic Health Effects: 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, newer rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA. US EPA classifies MCPA as not likely to be carcinogenic in humans. There is no data available for 2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid.

Reproductive Toxicity: In laboratory animal studies, MCPA has caused effects on reproduction but only at doses that produced significant toxicity to the parent animals. There is no data available for 2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid.'

Developmental Toxicity: Studies in laboratory animals with MCPA have caused birth defects only at doses severely toxic to the mother. MCPA has been toxic to the fetus in laboratory animals at doses toxic to the mother. There is no data available for 2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid.

Genotoxicity: MCPA is not mutagenic. There is no data available for 2-Ethylhexyl Ester of 2-Methyl-4-Chlorophenoxyacetic acid.

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
Other Ingredients	No	No	No	No

IARC Group 2B: Possibly carcinogenic to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on MCPA 2-EHE:

96-hour LC ₅₀ Bluegill:	3.9 mg/l	Bobwhite Quail Dietary LC ₅₀ :	>5,620 ppm
96-hour LC ₅₀ Rainbow Trout:	3.2 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
48-hour EC ₅₀ Daphnia:	0.28 mg/l	Bobwhite Quail Oral LD ₅₀ :	2250 mg/kg

Environmental Fate:

MCPA 2-EHE is rapidly de-esterified to parent MCPA acid in the environment. In soil, MCPA is microbially degraded with a typical half-life of approximately 10 to 14 days.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning is not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION**DOT**

< 119 gallons per complete package

Non Regulated

≥ 119 gallons per complete package

UN 3082, Environmentally hazardous substance, liquid, n.o.s.

(MCPA Ester), 9, III, Marine Pollutant

IMDG

UN 3082, Environmentally hazardous substance, liquid, n.o.s.

(MCPA Ester), 9, III, Marine Pollutant

IATA

UN 3082, Environmentally hazardous substance, liquid, n.o.s.

(MCPA Ester), 9, III, Marine Pollutant

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. May be fatal if absorbed through skin. Harmful if swallowed. Do not get in eyes, on skin, or on clothing

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):

Immediate and Delayed

Section 313 Toxic Chemical(s):

None

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

None

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: None 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

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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.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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