1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Rhonox Herbicide**
EPA Reg. No.: 11685-21-71368
Product Type: Herbicide

Company Name: Nufarm 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 Certain sections are superseded by federal law governed by EPA for a registered pesticide.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

PHYSICAL HAZARDS:
Not hazardous

HEALTH HAZARDS:

Acute Toxicity Oral	Category 4
Acute Toxicity Dermal	Category 4
Eye Irritation	Category 2B
Aspiration Toxicity	Category 1

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2

SIGNAL WORD:
DANGER

HAZARD STATEMENTS:
Harmful if swallowed or in contact with skin. Causes eye irritation. May be fatal if swallowed and enters airways. Toxic to aquatic life.

PRECAUTIONARY STATEMENTS

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

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

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

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.

Store locked up.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
2-methyl-4-chlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester	29450-45-1	66.5 – 70.7
Distillates (Petroleum), Hydrotreated Light	64742-47-8	20.6 – 22.0
Other Ingredients	Trade Secret	Trade Secret

Synonyms: MCPA 2EHE

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 and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Get medical attention if irritation occurs and persists.
If Swallowed: DO NOT induce vomiting. Get immediate medical attention.
If Inhaled: Move person to fresh air. If breathing is difficult, administer oxygen. If symptoms develop, get medical advice.
If on Skin or Clothing: Take off contaminated clothing. Rinse skin with plenty of water for several minutes. If irritation or symptoms occur, get medical advice.
Most important symptoms/effects, acute and delayed: Causes eye irritation. May be harmful if swallowed or in contact with skin. Aspiration hazard – may be fatal if swallowed and enter airways.
Indication of immediate medical attention and special treatment needed, if necessary: Get immediate medical attention for ingestion.

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: Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride, other chlorine compounds, nitrogen oxides, and carbon oxides.

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 Clean-Up 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. If pesticide gets on skin, wash immediately with soap and water. Remove 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:
Always store pesticides in a secured warehouse or storage building. Do not store near open containers of fertilizer, seed or other pesticides. 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 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 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 coveralls over short-sleeved shirt and short pants, chemical-resistant gloves and chemical-resistant footwear plus socks. For overhead exposure, wear chemical-resistant headgear. Wear a chemical-resistant apron when cleaning equipment, mixing, or loading. 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:

	OSHA		ACGIH		
Component	TWA	STEL	TWA	STEL	Unit
MCPA 2EHE	NE	NE	NE	NE	
Distillates (Petroleum), Hydrotreated Light	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Transparent light brown liquid
Odor:	Surfactant-like
Odor threshold:	No data available
pH:	3.48 (1% w/w dispersion in DIW)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	> 230º F (>110º C)
Evaporation rate:	No data available
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available

Vapor density:	No data available
Relative density:	0.980 g/mL @ 25º C; 0.970 g/mL @ 39º 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:	12.01 cPs @ 25º C; 6.84 cPs @ 39º 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 reactive.
Chemical Stability: This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reaction: 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, nitrogen oxides, and carbon oxides.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin contact, Eye contact, Inhalation
Symptoms of Exposure:
Eye Contact: Causes eye irritation. Vapors and mists can cause irritation.
Skin Contact: Mildly irritating based on toxicity studies. Overexposure by skin absorption may cause symptoms similar to those for ingestion. Harmful in contact with skin.
Ingestion: Harmful if ingested. May cause nausea, vomiting, abdominal pain, weakness of arms and/or legs, dizziness, loss of coordination. The petroleum hydrocarbon component, if aspirated into the respiratory system during ingestion or vomiting may cause mild or severe pulmonary injury, possibly progressing to death.
Inhalation: May cause upper respiratory tract irritation, coughing, wheezing, nausea, headache, depression. Overexposure to petroleum hydrocarbon component may cause irritation to respiratory tract, headaches, anesthesia, drowsiness, unconsciousness and other central nervous system effects, possibly including death.
Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:
Data from laboratory studies on this product are summarized below:
Oral: Rat LD_{50}: 1,800 mg/kg (female)
Dermal: Rabbit LD_{50}: 1,400 mg/kg
Inhalation: Rat 4-hr LC_{50}: 6.18 mg/L (no mortality at maximum attainable concentration)
Eye Irritation: Rabbit: Minimally irritating
Skin Irritation: Rabbit: Moderately irritating (PDII=1.5)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure may cause effects to liver, kidneys, blood chemistry, testes 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 of MCPA for prolonged periods.
Carcinogenicity / Chronic Health Effects: Rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA.
Reproductive Toxicity: MCPA studies in laboratory animals have shown testicular effects and lower male fertility.
Developmental Toxicity: MCPA studies in laboratory animals have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that MCPA is not mutagenic.

Assessment Carcinogenicity:
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

	Regulatory Agency Listing As Carcinogen			
Component	**ACGIH**	**IARC**	**NTP**	**OSHA**
Chlorophenoxy Herbicides (MCPA)	No	2B	No	No
Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Data on MCPA 2EHE:

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		

Environmental Fate:
MCPA 2EHE is rapidly de-esterfied 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:
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. 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 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. 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 and, if possible, spray all sides while adding 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

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT

< 119 gallons per complete package
Non Regulated – See 49 CFR 173.132(b)(3) & 172.101 Appendix A

≥ 119 gallons per complete package
UN 3082,Environmentally hazardous substance, liquid, n.o.s.
(MCPA Ester), 9, III, RQ, 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

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. Causes skin irritation. 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):
Acute Health

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: 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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