

MATERIAL SAFETY DATA SHEET



HELM AGRO US, INC.
8295 Tournament Drive, Suite 310
Memphis, Tennessee 38125
phone: 901-312-1525
Chemtrec: (800) 424-9300

Issue Date 7/1503

SECTION 1 NAME & HAZARD SUMMARY

Material name: **RO-NEET® 6-E Selective Herbicide**

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: Combustible liquid

Health hazards: Irritant (skin, eye). Harmful (cholinesterase inhibitor).

SECTION 2 INGREDIENTS

%

Cycloate Technical (CAS 1134-23-2)

73.9

Kerosene (CAS# 8008-20-6)

26.1

Ingredients not precisely identified are proprietary or nonhazardous.

Values are not product specifications.

SECTION 3 PHYSICAL DATA

Form:	Liquid
Physical state:	Emulsifiable concentrate
Color:	Amber
Specific gravity:	0.97 at 68°F (20°C)
Solubility:	Solubility in water: Not soluble in water. Readily forms an emulsion.

SECTION 4 FIRST AID MEASURES

GENERAL ADVICE:

If a known exposure occurs or is suspected, immediately start the recommended procedures below. Simultaneously contact a physician or the nearest hospital.

Be sure to advise the person contacted that this product may be a mild cholinesterase inhibitor. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms, and follow the advice given.

IF IN EYES:

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel.

IF ON SKIN:

Using a dry cloth, wipe away all excess material from the skin. Wash material off the skin with plenty of soap and water. Obtain medical attention. Wash contaminated clothing and decontaminate footwear before reuse.

IF SWALLOWED:

Provided the patient is conscious, give 1 or 2 glasses of water to drink. Immediately contact a physician. Vomiting should only be induced under the direction of a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water. Immediately transport victim to an emergency facility.

IF INHALED:

Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

MEDICAL ADVICE:

If cholinesterase inhibition is suspected, atropine by injection is antidotal. Pralidoxime chloride (2-PAM) is NOT recommended as an antidote for this compound.

Thiocarbamates have been shown in laboratory animals to cause a disulfiram (Antabuse) - type reaction in combination with alcohol.

SECTION 5 FIRE FIGHTING MEASURES

Flash point: 168°F, TCC

Autoignition temperature: No data

Flammable limits (STP): No data

MATERIAL SAFETY DATA SHEET (continued)

EXTINGUISHING MEDIA:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area. Use standard firefighting techniques in extinguishing fires involving this product. Use water spray, dry chemicals, foam or carbon dioxide. Keep fire exposed containers cool by spraying with water. High pressure water hose may spread product from broken containers increasing contamination hazards. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated.

FIRE AND EXPLOSION HAZARDS:

Combustible. It will support combustion and decomposes under fire conditions to give off toxic materials. The product contains kerosene and a proprietary mixture of surfactants which contribute to its combustibility.

PROTECTIVE EQUIPMENT:

Self-contained breathing apparatus with full facepiece and protective clothing.

NFPA RATING:

Health: 2
Fire: 2
Reactivity: 1

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Steps to be taken in case material is released or spilled:

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact.

METHODS FOR CLEANING UP:

Do not allow the material to enter streams, sewers or other waterways. Spread a suitable absorbent such as clay on the spill, and shovel into an open drum.

Generously cover the contaminated areas with common, household detergent (e.g. TIDE, registered trademark of Proctor & Gamble Co.). Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders. Spread absorbent on the slurry liquid and shovel mixture into the open drum. Rinse with small amount of water and use absorbent to collect the wash solution. Shovel into the open drum. Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan. Otherwise, in case of emergency, day or night, call Chemtrec: 1-800-424-9300.

SECTION 7 HANDLING AND STORAGE

REQUIREMENTS FOR STORAGE ROOMS:

Containers should be stored in a cool, dry, well-ventilated area at temperatures above -6.77°C / 20°F. Crystallization occurs at lower temperatures. Mix to redissolve crystals and insure uniformity before use.

ADDITIONAL INFORMATION:

Do not store near feed, food, or within the reach of children.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits:

TLV or suggested control value:

No ACGIH TLV or OSHA PEL assigned. Minimize exposure in accordance with good hygiene practice.

ENGINEERING CONTROLS:

Ventilation:

Use ventilation adequate to maintain safe levels. If needed, use local exhaust to keep exposures to a minimum. This product is intended for use outdoors where engineering controls are not necessary. If use conditions are different (e.g. product reformulation or repackaging), employee exposure should be minimized using traditional techniques such as enclosed system design and/or local exhaust ventilation.

EYE PROTECTION:

Chemical tight goggles; full faceshield in addition if splashing is possible.

BODY PROTECTION:

This product is FIFRA regulated. Refer to product labeling for end-user Personal Protection requirements. Impervious gloves and apron.

RESPIRATORY PROTECTION:

If needed, use MSHA-NIOSH approved respirator for pesticides.

MATERIAL SAFETY DATA SHEET (continued)

Other protective equipment:

An adequate supply of clean potable water should be available to allow thorough flushing of skin and eyes in event of contact with this compound.

Special precautions or other comments:

Follow procedures specified in the National Fire Protection Association codes and standards for handling combustible liquids. Prevent skin and eye contact with this material. Avoid inhalation of spray mist. Showers at the end of the work day are desirable. Workers must follow good personal hygiene practices. Wash with soap and water immediately after use or contact. Do not eat, drink, or smoke in areas where the material is being used. Keep food and animal feed in separate area away from the storage/use location.

SECTION 9 STABILITY AND REACTIVITY

HAZARDOUS REACTIONS (CONDITIONS TO AVOID)

Stability:

Stable under normal conditions above -6.7°C / 20°F. Product crystallizes at lower temperatures.

Incompatibility:

The product is relatively nonreactive. Noncorrosive to materials commonly used in the construction of process equipment, storage and shipping containers.

Hazardous polymerization:

Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS

Combustion products: Toxic materials.

SECTION 10 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (LETHAL DOSES)

LD50 Ingestion male rats: 3160 mg/kg

LD50 Ingestion female rats: 3690 mg/kg

Additional information: A single dose of this product is classified as 'slightly toxic' by ingestion.

Irritation of the gastrointestinal tract is associated with ingestion of the hydrocarbon solvent. Ingestion of excessive quantities can also induce signs of central nervous system depression (e.g., drowsiness, dizziness, loss of coordination, and fatigue). Small amounts of the hydrocarbon solvent, if aspirated into the lungs during ingestion or subsequent vomiting, may induce severe lung congestion resulting in labored breathing, coma and death.

LD50 Skin absorption rabbit: >4640 mg/kg

Additional information: A single dermal application of 4640 mg/kg did not produce signs of toxicity or mortality in rabbits.

Dermal rabbit:

Additional information: This material was classified as 'moderately irritating' in rabbit dermal irritation studies.

Dermal guinea pig:

Additional information: This material was classified as 'moderately irritating' in guinea pig dermal irritation studies. This material is likely to irritate human skin. It was not a skin sensitizer in guinea pig testing.

LC50 Inhalation rat: >5 mg/l

Additional information: Inhalation of mists or vapors may cause headache or nausea. This substance is considered moderately toxic by inhalation.

ACUTE TOXICITY (IRRITATION, SENSITIZATION ETC.)

Eye contact rabbit: Mild/moderate irritant to rabbit eyes.

Additional information: A similar degree of irritation will probably occur after human eye contact.

GENERAL INFORMATION ABOUT ACUTE OR OTHER TOXICITIES

General information:

The active ingredient produced cholinesterase inhibition in experimental animals. Symptoms of cholinesterase inhibition include salivation, sweating, headache, nausea, muscle twitching, tremors, incoordination, blurred vision, tearing, abdominal cramps, diarrhea and chest discomfort. In two studies, researchers saw functional and structural effects in rat brains that were related to cycloate exposure. Exposures were either by stomach tubes (for single dose) or in the diet of the rats for 90 days. These effects were seen at 750 and 2000 mg/kg after single doses, and at 30 and 300 mg/kg-day after 90 consecutive days of cycloate in the diet. This description of toxicological properties is based on experimental results and experience with the material.

Other effects of overexposure:

Laboratory tests in animals have shown that exposure to the active ingredient in this product, followed by ingestion of alcohol, may cause an adverse reaction, including low blood pressure, rapid heart beat, and flushing of the skin.

MATERIAL SAFETY DATA SHEET (continued)

Consumption of alcohol during and after exposure to this product should be avoided.

The active ingredient produced mild cholinesterase inhibition in laboratory animals. The principal routes of exposure are skin contact with the product and inhalation of its mists or vapors. Severe cases of cholinesterase inhibition can lead to convulsions, pulmonary edema, respiratory failure and death.

The active ingredient in this formulation was found to be negative in Ames test.

Inhalation of high concentrations of kerosene may cause headache, dizziness, confusion, excitement, or drowsiness. In a lifetime skin painting study in mice, kerosene showed a minimal to moderate potential to cause skin tumors. Kerosene is not, however, listed as a carcinogen by NTP, IARC, or OSHA. Prolonged skin contact with this product should be avoided.

SECTION 11 ECOLOGICAL INFORMATION

ADDITIONAL INFORMATION ABOUT ECOLOGY

This material is toxic to fish and wildlife.

SECTION 12 DISPOSAL CONSIDERATIONS

Disposal method:

As of January 28, 1997, discarded product is not a hazardous waste under RCRA, 40 CFR 261.

Container disposal:

Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or alternatives allowed by state and local authorities.

SECTION 13 TRANSPORT INFORMATION

ROAD TRANSPORT DOT

Non-bulk: Not regulated by DOT

Bulk: Combustible liquid, n.o.s. (contains kerosene), NA1993, PG III.

SECTION 14 REGULATORY INFORMATION

HAZARDOUS INGREDIENTS:

Cycloate Technical
Kerosene

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710:

This product is a pesticide and is exempt from TSCA regulation.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:
73.9% Cycloate (CAS 1134-23-2)

EPA Registration No.: 73637-5-74530

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE, HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. HELM AGRO US, INC. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USERS OR THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS ASSUME ALL RISKS ASSOCIATED WITH THE USE OF THE MATERIAL.