

Material Safety Data Sheet

Product Name: MAINTAIN® CF 125

MSDS Number: RC001

MSDS Date: 01-17-01

1. Product Identification/Composition:

Manufacturer: Repar Corporation
Telephone: 202-223-1424
Address: P.O. Box 4321
City, State, Zip: Silver Spring, MD. 20914
Emergency Phone: 202-223-1424
24 Hour Emergency Phone(CHEMTREC): 1-800-424-9300

Chemical Names:

Active Ingredients:	CAS Number	Percentage by Weight
Methyl 2-chloro-9-hydroxy-9H-fluorene-9-carboxylate	2536-31-4	8.8%
Methyl 2,7-dichloro-9-hydroxy-9H-fluorene-9-carboxylate	21634-96-8	1.6%
Methyl 9-hydroxy-9H-fluorene-9-carboxylate	1216-44-0	2.1%

Common Name for Mixture of Active Ingredients:

Chlorflurenol-Methyl
(Chlorflurenol Methyl Ester) 37339-61-0

Other Ingredients:
Organic solvents and emulsifiers N/A 87.5%

Molecular Formula for Mixture of Active Ingredients:

$C_{15}H_{12}O_3 + C_{15}H_{11}ClO_3 + C_{15}H_{10}Cl_2O_3$

Product Use: Plant growth regulator and herbicide

2. Health Hazard Information:

EMERGENCY AND FIRST AID PROCEDURES

IF SWALLOWED: Call a physician or poison control center immediately. Drink promptly large quantities of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. DO NOT induce vomiting. Avoid alcohol.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably, mouth-to-mouth. Get immediate medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention, if irritation persists.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

ROUTES OF EXPOSURE

INHALATION: Breathing of spray mist is expected to be a primary route of exposure and may produce nose, throat and respiratory tract irritation.

SKIN: Dermal contact is expected to be a primary route of exposure and can cause skin irritation. Not considered a sensitizing agent.

EYE CONTACT: May result in corrosion to the eyes or irreversible eye damage.

INGESTION: May cause dulling of senses

TOXICOLOGY DATA:

Oral LD₅₀ (rat): 3.16 ml/kg or 3196 mg/kg

Dermal LD₅₀ (rabbit): > 4.64 ml/kg or 4686 mg/kg

Inhalation (rats): 68.7 mg/l over 60 minutes gave no mortality

Skin irritation (rabbit): Moderate Irritant
Eye irritation (rabbit): Irritant

Administration of up to 300 ppm (active ingredient) in the diet of beagles for two years produced no detectable adverse effects. Up to 1000 ppm (active ingredient) in the diet of rats for 52 weeks produced no detectable adverse effects. Overexposure to the solvents present in the formulation may cause adverse effects to the central nervous system.

3. Important Components:

CAS NUMBER	NAME
2536-31-4	Methyl-2-chloro-9-hydroxyfluorene-(9)-carboxylate

EXPOSURE LIMITS

PEL: Not Established

TLV: Not Established

COMMON NAME:

Chlorflurenol methyl ester

All components of this product that are required to be on the TSCA Inventory are listed on the inventory.

4. Fire and Explosion Data:

FLASH POINT: 143.9° F or 62.1° C (COC)

AUTOIGNITION TEMPERATURE: 454° C

FLAMMABLE LIMITS IN AIR, % BY VOLUME- UPPER: ND
LOWER: ND

EXTINGUISHING MEDIA: In case of fire or smoke, call the fire department. Do not attempt to extinguish the fire without a self contained breathing apparatus (SCBA). Do not let the fire burn. Flood with copious amounts of water. Use water fog, foam, or CO₂.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear full protective clothing and self-contained breathing apparatus (SCBA) to protect against inhalation of combustion products.

UNUSUAL FIRE AND EXPLOSION HAZARD: Emits toxic fumes of carbon monoxide and carbon dioxide. During fire, hydrochloric acid may be formed.

5. Special Protection:

VENTILATION REQUIREMENTS: Sufficient ventilation to minimize exposure to vapor.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as barrier laminate or viton
- Shoes plus socks
- Protective eye wear

OTHER CLOTHING AND EQUIPMENT: Emergency shower and eyewash facilities should be in close proximity (ANSI Z358.1). Launder contaminated clothing and wash hands and face after use. Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

RESPIRATORY: NIOSH/MSHA approved respirator, following manufacturer's recommendations, should be used as a precautionary measure where airborne contaminants may occur. (OSHA Standard 29 CFR 1910.134).

EYE: Wear chemical safety goggles (ANSI Z87.1).

GLOVES: Wear chemical resistant gloves.

6. Physical Data:

APPEARANCE: Amber colored liquid **ODOR:** Lactone odor
MELTING POINT: NA
BOILING POINT: ND
SOLUBILITY:
SPECIFIC GRAVITY (H₂O = 1): 1.01
Water: Emulsifies
Other: Slightly soluble in methanol & acetone
VAPOR PRESSURE @ 20° C: 4mm
ODOR THRESHOLD (ppm): No data
VAPOR DENSITY (Air = 1): ND
pH: ND
FREEZING POINT: Under -35° C

7. Reactivity Data:

STABILITY: Stable
INCOMPATIBILITY: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of carbon monoxide, carbon dioxide and possibly hydrochloric acid.

8. Handling and Storage:

HANDLING AND STORAGE PRECAUTIONS: Do not get into eyes, on skin, on clothing. Wear goggles or face shield and chemical resistant gloves when handling. Avoid breathing spray mist or fumes. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.
STORAGE: Store in cool, dry area away from heat or open flame.
PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container. Do not store below 4°C.

Do not contaminate water, food, or feed by storage or disposal.

DIRECTIONS FOR USE: It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product through any irrigation system. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

9. Accidental Release and Disposal / Environmental Information

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Follow protective measures indicated in the Special Protection Section of this MSDS.

Absorb on inert material. Shovel into containers for proper disposal. Avoid personal contact.

Do not contaminate water, food, or feed by storage or disposal.

WASTE DISPOSAL METHOD: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. 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.

PESTICIDE DISPOSAL: Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to applicable Federal, State or local procedures.

CONTAINER DISPOSAL: "Triple rinse (or equivalent). Then dispose of in a sanitary landfill, or by other approved State and local procedures."

ENVIRONMENTAL EFFECTS:

LC50	Trout	2.5-5.5 ppm
LC50	Goldfish	13.5 ppm
LD50	Bobwhite quail	2.38 ml/kg

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

10. Transport Information:

DOT PROPER SHIPPING NAME: COMBUSTIBLE LIQUID, N.O.S.

This product is not regulated or classified by IATA/ICAO or IMO as hazardous materials or dangerous goods offered for transport based on the product's flash point.

There are no requirements for the labeling, marking, placarding, and packaging of shipments of this product that are offered for transport by rail, air, highway, or ocean vessel.

11. Additional Information:

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

PESTICIDE REGISTRATION INFORMATION:

U.S. EPA Registration No. 69361-6

12. Preparation Information:

For additional Non-Emergency health, safety, or environmental information, telephone (202) 223-1424, or write to:

REPAR CORPORATION
P.O. Box 4321
Silver Spring, MD. 20914
Attention: Dr. N. Mandava

CAS = Chemical Abstract Service
ND = No relevant information found or not available
PEL = OSHA Permissible Exposure Limit
TLV = ACGIH Threshold Limit Value, Current
* = See Chronic Effects
NA = Not Applicable

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