



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Nufarm Chloromequat SPC Plant Growth Regulator
EPA Reg. No.: 228-688
Product Type: Plant Growth Regulator

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 Certain sections are superseded by federal law governed by EPA for a registered pesticide.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

None

HEALTH HAZARDS:

| | |
|-----------------|-------------|
| Acute toxicity | Category 4 |
| Skin irritation | Category 2 |
| Eye irritation | Category 2B |

ENVIRONMENTAL HAZARDS:

| | |
|--|------------|
| Hazardous to the aquatic environment (acute) | Category 3 |
|--|------------|

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if swallowed. Causes skin irritation. Causes eye irritation. Harmful to aquatic life.



PRECAUTIONARY STATEMENTS

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Call a poison center/doctor if you feel unwell. See emergency medical phone number in Section 1 for medical advice. Rinse mouth.

Wear protective gloves. If on skin: Wash with plenty of water. Specific treatment: See product label and Section 4 First Aid for instructions. If skin irritation persists, get medical advice/attention. Take off contaminated clothing and wash it 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/attention.

Dispose of contents/container in accordance with state and federal regulations. See product label and Section 13 for disposal advice. Avoid release to the environment.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NO. | % BY WEIGHT |
|-----------------------|--------------|--------------|
| Chloromequat chloride | 999-81-5 | 11.2 – 12.4 |
| Other ingredients | Trade Secret | Trade Secret |

Synonyms: 2-chloroethyl trimethyl ammonium chloride; 2-chloro-N,N,N-trimethylethanaminium chloride
Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. 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 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 Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Most Important symptoms/effects, acute and delayed: May cause slight skin irritation and moderate eye irritation.

Indication of Immediate medical attention and special treatment if needed, if necessary: None expected.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA 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: 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 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: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container 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 or on clothing or skin. 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 Personal Protective Equipment (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: Store in original container. Do not store below freezing temperatures. 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.

Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. 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:

| Component | OSHA | | ACGIH | | Unit |
|-----------------------|------|------|-------|------|------|
| | TWA | STEL | TWA | STEL | |
| Chloromequat chloride | NE | NE | NE | NE | |
| Other Ingredients | NE | NE | NE | NE | |

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|---|
| Appearance: | Clear liquid |
| Odor: | Aromatic odor |
| Odor threshold: | No data available |
| pH: | 6.35 (1% w/w dilution in DIW) |
| Melting point/freezing point: | No data available |
| Initial boiling point and boiling range | No data available |
| Flash point: | No data available |
| 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: | 1.021 g/mL @20° C |
| Solubility(ies): | Soluble |
| Partition coefficient: n-octanol/water: | No data available |
| Autoignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Viscosity: | 1.319 cSt (20° C) and 0.935 cSt (40° 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: Stable under normal conditions of use.

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

Possibility of Hazardous Reactions: 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. Corrosive to aluminum.

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: Inhalation, Eye contact, Skin contact

Eye Contact: Mildly irritating based on toxicity studies.

Skin Contact: Minimally toxic and slightly irritating based on toxicity studies.

Ingestion: Slightly toxic if ingested based on toxicity studies.

Inhalation: Low inhalation toxicity based on toxicity studies.

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

Toxicological Data:

Data from laboratory studies conducted are summarized below:

Oral: Rat LD₅₀: 3,129 mg/kg (females)

Dermal: Rat LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.04 mg/L

Eye Irritation: Rabbit: Mildly irritating

Skin Irritation: Rabbit: Slightly irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated ingestion exposure to chlormequat chloride may cause decreases in body weight and body weight gain.

Carcinogenicity / Chronic Health Effects: Repeated overexposure to chlormequat chloride may cause effects to body weight loss. Chlormequat chloride did not cause cancer in long-term animal studies.

Reproductive Toxicity: Reproductive studies for chlormequat chloride in rats show reduced body weight gain and focal muscular dystrophy at levels which produce other toxic effects in the adult animal.

Developmental Toxicity: Chlormequat chloride was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.

Genotoxicity: Tests with chlormequat chloride have shown no evidence of mutagenicity.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Chlormequat Chloride (63%):

| | | | |
|---|-----------|---|--------------|
| 96-hour LC ₅₀ Bluegill: | >100 mg/l | Honey Bee LD ₅₀ : | >65.2 ug/bee |
| 96-hour LC ₅₀ Rainbow Trout: | >100 mg/l | Bobwhite Quail Oral LD ₅₀ : | 265 mg/kg |
| 48-hour EC ₅₀ Daphnia: | 16.9 mg/l | Mallard Duck 8-day Dietary LC ₅₀ : | >5,438 ppm |
| 96-hour EC ₅₀ Green Algae | >899 mg/l | | |

Environmental Fate:

The major route of dissipation for chlormequat chloride appears to be microbial degradation in both soil and aquatic systems. The average half-lives in soil were 32 – 132 days and 5 – 9 days in aquatic systems. Anaerobic degradation and photodegradation in soil are not considered to be significant routes of degradation for chlormequat chloride. Chlormequat chloride is stable from hydrolysis and photolysis. Chlormequat chloride is readily biodegradable.

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. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal:

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

Refillable containers: 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**

Non Regulated

IMDG

Non Regulated

IATA

Non Regulated

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

SAFETY DATA SHEET

Nufarm Chloromequat SPC Plant Growth Regulator

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.

CAUTION. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

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

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: 1 Flammability: 1 Reactivity: 0z

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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