1. IDENTIFICATION

Product name: CYCOCEL® PLANT GROWTH REGULATOR

EPA Registration No.: 241-74-59807

Recommended use of the chemical and restriction on use

Recommended use*:
* The “Recommended use” identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller’s published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller’s sales agreement.

Other means of identification

Molecular formula: C_{5} H_{13} Cl_{2} N

Chemical family: quaternary ammonium compound

Synonyms: chlormequat chloride

Company information: OHP, Inc.

PO Box 746
Bluffton, SC  29910-0746
(800) 659-6745

TRANSPORTATION EMERGENCY
(24 hours a day) call: Chemtrec: 1-800-424-9300

MEDICAL EMERGENCY (24 hours a day) and Product Information call: 1-800-356-4647

SDS Information or Request: ohp.com

2. HAZARDS IDENTIFICATION


Classification of the product

Acute Tox.  4 (oral)  Acute toxicity

Label elements

Pictogram: ⚠️

Signal Word: Warning

Hazard Statement:
H302 Harmful if swallowed.

Precautionary Statements (Prevention):
P270 Do not eat, drink or smoke when using this product.

Precautionary Statements (Response):
P301 + IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: Sorbitan monolaurate, ethoxylated

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % dermal

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % oral

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 1 - 2 % Inhalation - vapour

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 1 - 2 % Inhalation - mist

3. COMPOSITION/INFORMATION ON INGREDIENTS


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Weight %</th>
<th>Chemical Name</th>
</tr>
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<tbody>
<tr>
<td>999-81-5</td>
<td>11.8 %</td>
<td>chlormequat chloride</td>
</tr>
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</table>

4. FIRST AID MEASURES

Description of first aid measures

General advice: Remove contaminated clothing.

If inhaled: Keep patient calm, remove to fresh air, seek medical attention.

If on skin: Wash thoroughly with soap and water.

If in eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open.
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Revision Date: 06/04/2018

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazard during fire-fighting: carbon monoxide, carbon dioxide, nitrogen oxides, acid halides

The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting: Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information: Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions: Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up: Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion: No explosion proofing necessary.

Conditions for safe storage, including any incompatibilities: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.
Protect from temperatures below 0°C. Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above 40°C. Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. EXPOSURE CONTROLS/PERSO NAL PROTECTION

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

No occupational exposure limits known.

Advice on system design: Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection: Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection: Chemical resistant protective gloves. Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection: Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures: Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid

Odour: fish-like, faint odour

Odour threshold: Not determined due to potential health hazard by inhalation.

Colour: colourless, clear

pH value: 4.8 - 5.2

Freezing point: approx. 0°C (1,013.3 hPa)

Boiling point: approx. 100°C (1,013.3 hPa)

Flammability: not applicable

Lower explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Upper explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Autoignition: not applicable

Vapour pressure: approx. 23.3 hPa (20°C)

Density: approx. 1.02g/cm³ (20°C) (OECD Guideline 109)

Relative density: approx. 1.02 (20°C)

Vapour density: not applicable

Information on: chlormequat chloride

Partitioning coefficient n-octanol/water (log Pow): -3.47
Self-ignition temperature . . . . . . : not self-igniting

Thermal decomposition . . . : carbon monoxide, carbon dioxide, Hydrogen chloride, nitrogen oxide
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. If product is heated above decomposition temperature hazardous fumes may be released.

Viscosity, dynamic . . . . . . : approx. 1.55 mPa.s (20°C) (OECD 114)

Solubility in water . . . . . . : completely soluble

Molar mass . . . . . . . . . . . . : 158.1 g/mol

Evaporation rate . . . . . . : not applicable

Other Information . . . . . . . : If necessary, information on other physical and chemical parameters is indicated in this section.

10. STABILITY AND REACTIVITY
Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals
Corrosive effect on . . . . . : carbon steel (iron)
Oxidizing properties . . . . . : Not an oxidizer.
Chemical stability . . . . . . .: The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions . . . . . . : The product is chemically stable.
Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid
Avoid all sources of ignition . . . . . . . : heat, sparks, open flame.

Incompatible materials . . . . . : oxidizing agents, strong alkalies, carbon steel (iron)

Hazardous decomposition products
Decomposition products . . . : No hazardous decomposition products if stored and handled as prescribed/indicated. Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition
Possible thermal decomposition products . . . . . . : carbon monoxide, carbon dioxide, Hydrogen chloride, nitrogen oxide
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. If product is heated above decomposition temperature hazardous fumes may be released.

11. TOXICOLOGICAL INFORMATION
Primary routes of exposure
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Oral
Type of value: LD50
Species: human
Value: 50 - 200 mg/kg
Literature data. The data on toxicology refer to the active ingredient.

Type of value: LD50
Species: rat
Value: > 6,000 mg/kg

Inhalation
Type of value: LC50
Species: rat
Value: > 5.2 mg/l
Exposure time: 4 h
No mortality was observed.

Type of value: ATE
Value: > 20,000 mg/l
Determined for vapor

Type of value: ATE
Value: > 5,0000 mg/l
Determined for mist

Dermal
Type of value: LD50
Species: rat
Value: >2,000 mg/kg
No mortality was observed.

Irritation / corrosion
Assessment of irritating effects: May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Skin
Species: rabbit
Result: non-irritant
Method: OPP 81-5 (EPA-Guideline)
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12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to fish. Acute harmful for aquatic invertebrates. There is a high probability that the product is not acutely harmful to aquatic plants.

Aquatic invertebrates: Information on: chlormequat chloride

LC50 (96 h) > 100 mg/l, Cyprinus carpio (OECD 203; ISO 7346; 84/449/EEC, C.1, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants: Information on: chlormequat chloride

EC50 (96 h) > 100 mg/l, Pseudokirchneriella subcapitata (OECD Guideline 201, static)

The product has not been tested. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

Ecological toxicity

Assessment of terrestrial toxicity

With high probability not acutely harmful to terrestrial organisms.

Other terrestrial non-mammals: Information on: chlormequat chloride

LC50 > 5,000 mg/kg, Colinus virginianus

The product has not been tested. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

Other Information

Misuse can be harmful to health.

Symptoms of Exposure

No significant reaction of the human body to the product known.
LC50 > 5,000 mg/kg feed, 
Anas platyrhynchos 
Apis mellifera 
No data available.

Persistence and degradability
Elimination information . . . : Poorly biodegradable.
Assessment biodegradation and elimination (H2O)
Information on . . . . . . : chlormequat chloride
Not readily biodegradable (by OECD criteria). Moderately/partially biodegradable.

Bioaccumulative potential
Assessment Bioaccumulation potential
This product has not been tested. The statement has been derived from the properties of the individual components.

Mobility in soil
Assessment transport between environmental compartments . . . . . . : The product has not been tested. The statement has been derived from the properties of the individual components.
Information on . . . . . . : chlormequat chloride
Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information
Other ecotoxicological advice . . . . . . . . . . . : Do not discharge product into the environment without control.

13. DISPOSAL CONSIDERATIONS
Waste disposal of substance . . . . . . . . : Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinseate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container disposal . . . . . . . : Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.
RCRA . . . . . . . . . . . . : This product is not regulated by RCRA.

14. TRANSPORT INFORMATION
Land transport
USDOT
Not classified as a dangerous good under transport regulations
Sea transport
IMDG
Not classified as a dangerous good under transport regulations
Air transport
IATA/ICAO
Not classified as a dangerous good under transport regulations

15. REGULATORY INFORMATION
Federal Regulations
Registration status
Crop Protection TSCA, US released / exempt
Chemical TSCA, US released / listed
EPCRA 311/312 (Hazard categories) . . . . : Acute;
CA Prop. 65:
There are no listed chemicals in this product.
Labeling requirements under FIFRA
This chemical is a pesticide product registered by the 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, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.
CAUTION . . . . . . . . . : KEEP OUT OF REACH OF CHILDREN.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
Avoid contact with the skin, eyes and clothing.

16. OTHER INFORMATION
Other Information
SDS Prepared on . . . . . . : 06/04/2018
We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensur-
CYCOCEL® PLANT GROWTH REGULATOR

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Revision Date: 06/04/2018

CYCOCEL® is a registered trademark of BASF.

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