

CYCOCEL® PLANT GROWTH REGULATOR

EPA Registration Number: 241-74-59807

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*: Plant growth regulator

* 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: C5 H13 Cl2 N

Chemical family: quaternary ammonium compound

Synonyms: chlormequat chloride

Company information: OHP, Inc.
PO Box 51230
Mainland, PA 19451
(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

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

| | | |
|---------------|------------|--|
| Met. Corr. | 1 | Corrosive to metals |
| Acute Tox. | 4 (oral) | Acute toxicity |
| Acute Tox. | 4 (dermal) | Acute toxicity |
| Aquatic Acute | 3 | Hazardous to the aquatic environment - acute |

Label elements

Pictogram:



Signal word: Warning

Hazard Statement:

| | |
|------|-------------------------------|
| H290 | May be corrosive to metals. |
| H312 | Harmful in contact with skin. |
| H302 | Harmful if swallowed. |
| H402 | Harmful to aquatic life. |

Precautionary Statements (Prevention):

| | |
|------|---|
| P280 | Wear protective gloves/clothing. |
| P273 | Avoid release to the environment. |
| P270 | Do not eat, drink or smoke when using this product. |
| P264 | Wash with plenty of water and soap thoroughly after handling. |
| P234 | Keep only in original container. |

Precautionary Statements (Response):

| | |
|-------------|--|
| P312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| P303 + P352 | IF ON SKIN (or hair): Wash with plenty of soap and water. |
| P361 | Remove/Take off immediately all contaminated clothing. |
| P301 + P330 | IF SWALLOWED: rinse mouth. |
| P390 | Absorb spillage to prevent material damage. |

Precautionary Statements (Storage):

| | |
|------|---|
| P406 | Store in corrosive resistant/ container with a resistant inner liner. |
|------|---|

Precautionary Statements (Disposal):

| | |
|------|---|
| P501 | Dispose of contents/container to hazardous or special waste collection point. |
|------|---|

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

WARNING:

May be fatal if swallowed.
May be fatal if absorbed through skin.
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.

3. COMPOSITION/INFORMATION ON INGREDIENTS

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

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| CAS-No. | Content (W/W) | Chemical Name |
|----------|---------------|----------------------|
| 999-81-5 | 63.0 % | chlormequat chloride |

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

| CAS-No. | Content (W/W) | Chemical Name |
|----------|---------------|-------------------------|
| 999-81-5 | 63.0 % | chlormequat chloride |
| | 37.0 % | Proprietary ingredients |

4. FIRST AID MEASURES

Description of first aid measures

General advice: First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled: Remove the affected individual into fresh air and keep the person calm.

If on skin: Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes: Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed: Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Do not induce vomiting. Have person sip a glass of water if able to swallow.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing

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

Special hazards arising from the substance or mixture

Hazards during

fire-fighting: carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons, If product is heated above decomposition temperature, toxic vapours will be released. 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.

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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: The relevant fire protection measures should be noted. Fire extinguishers should be kept handy.

Avoid all sources

of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

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.: -10 °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/PERSONAL PROTECTION

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

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) organic vapour/particulate respirator. 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

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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: sweetish, moderate odour

Odour threshold: Not determined since harmful by inhalation.

Colour: light yellow

pH value: approx. 3 - 5
(1 %(m), 20 °C)

Crystallization temperature: approx. -17 °C

Boiling point: approx. 100 °C (DIN EN 22719; ISO 2719)

Flash point: No flash point - Measurement made up to the boiling point.

Flammability: not self-igniting

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: approx. 355 °C

Vapour pressure: approx. 23.3 hPa (20 °C)
Information applies to the solvent.

Density: approx. 1.14 g/cm³
(20 °C)

Vapour density: not applicable

Thermal decomposition: carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

Viscosity, dynamic: 17.5 mPa.s (20 °C)

Solubility in water: miscible

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: aluminum mild steel
Corrosion rate > 6.25 mm/a using 7075-T6 or AZ5GU-T6

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.
Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials: strong bases, strong acids, strong oxidizing agents strong oxidizing agents, strong alkalies

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, nitrogen dioxide, nitrogen oxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

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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

Acute toxicity

Assessment of acute

toxicity: Slightly toxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

Oral: Type of value: LD50
Species: rat (female)
Value: < 745 mg/kg

Type of value: LD50
Species: rat (male)
Value: > 745 mg/kg

Inhalation: Information on:
chlormequat chloride
Type of value: LC50
Species: rat
Value: > 5.2 mg/l
(BASF-Test)
Exposure time: 4 h
An aerosol was tested.
Highest concentration
available for testing.

Dermal: Information on:
chlormequat chloride
Type of value: LD50
Species: rabbit
Value: 1,250 mg/kg
Literature data.

Irritation / corrosion

Assessment of

irritating effects: May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

Skin: Species: rabbit
Result: non-irritant

Eye: Species: rabbit
Result: non-irritant

Sensitization

Assessment of

sensitization: There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from the properties of the individual components.

Mouse Local Lymph

Node Assay (LLNA): Species: mouse

Result: Skin sensitizing effects were not observed in animal studies.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated

dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. No substance-specific organotoxicity was observed after repeated administration to animals.

Genetic toxicity

Assessment of

mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of

carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of

reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of

teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

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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 aquatic plants. Acutely harmful for aquatic invertebrates. Acutely harmful for fish.

Toxicity to fish: 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 invertebrates: Information on:
chlormequat chloride
EC50 (48 h) 16.9 mg/l,
Daphnia magna
(DIN 38412 Part 11)
The details of the toxic effect relate to the nominal concentration.

Aquatic plants: Information on:
chlormequat chloride
EC50 (96 h) > 100 mg/l
(growth rate),
*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.
EC50 (7 d) 28.0 mg/l
(growth rate), *Lemna
gibba* (static)
The product has not been tested. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

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
LC50 > 5,000 mg/kg feed,
Anas platyrhynchos
Apis mellifera
No data available.

Bioaccumulative potential

Bioaccumulation potential

Information on: chlormequat chloride
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

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: The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. DISPOSAL CONSIDERATIONS

Waste disposal of

substance: Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate 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

Hazard class: 8

Packing group: III

ID number: UN 1760

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Hazard label : 8
Proper shipping name . . . : CORROSIVE LIQUID,
 N.O.S. (contains CHLORMEQUAT
 CHLORIDE) CORROSIVE ON ALUMINIUM

Sea transport
IMDG

Hazard class : 8
Packing group : III
ID number : UN 1760
Hazard label : 8
Marine pollutant : NO

Proper shipping name . . . : CORROSIVE LIQUID,
 N.O.S. (contains CHLORMEQUAT
 CHLORIDE) CORROSIVE ON ALUMINIUM

Air transport
IATA/ICAO

Hazard class : 8
Packing group : III
ID number : UN 1760
Hazard label : 8
Proper shipping name . . . : CORROSIVE LIQUID,
 N.O.S. (contains CHLORMEQUAT
 CHLORIDE) CORROSIVE ON ALUMINIUM

15. REGULATORY INFORMATION
Federal Regulations
Registration status

| | | |
|-----------------|----------|-------------------|
| Crop Protection | TSCA, US | released / exempt |
| Chemical | TSCA, US | released / listed |

EPCRA 311/312

(Hazard categories) : Acute;

State regulations

| State RTK | CAS Number | Chemical name |
|-----------|------------|----------------------|
| NJ | 999-81-5 | chlormequat chloride |

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.

icide chemicals. Following is the hazard information as required on the pesticide label.

WARNING : May be fatal if swallowed.
 May be fatal if absorbed through skin.
 KEEP OUT OF REACH OF CHILDREN.
 KEEP OUT OF REACH OF DOMESTIC ANIMALS.
 Do not get in eyes, on skin, or on clothing.
 Wash thoroughly after handling.

16. OTHER INFORMATION
Other Information

SDS Prepared on : 11/08/2014

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 ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

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