

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



MANIPULATOR

Customer PO: 423

Version	Revision Date:	SDS Number:	Date of last issue: 24.01.2019
1.7	12.12.2022	150000103741	Date of first issue: 15.12.2015
PRD		SDSIE / EN / 0331	J15 / 0092429004 / 0004354315

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : MANIPULATOR

Product code : P5123027

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Plant growth regulator

1.3 Details of the supplier of the safety data sheet

Company : Taminco BV
A Subsidiary of Eastman Chemical Company
Panterschipstraat 207
9000 Gent

E-mail address of person responsible for the SDS : Visit our website at www.EASTMAN.com or email emnmsds@eastman.com

1.4 Emergency telephone number

+353 (01) 809 2166 or +353 (01) 809 2566 NCEC +44 (0)1235 239 670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4

H302: Harmful if swallowed.

Long-term (chronic) aquatic hazard, Category 3

H412: Harmful to aquatic life with long lasting effects.

Corrosive to Metals, Category 1

H290: May be corrosive to metals.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

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Hazard statements : H302 Harmful if swallowed.
H412 Harmful to aquatic life with long lasting effects.
H290 May be corrosive to metals.

Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

SP1 Do not contaminate water with the product or its container

Precautionary statements : **Response:**
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P390 Absorb spillage to prevent material damage.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Chloromequat chloride

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Chloromequat chloride	999-81-5 213-666-4 007-003-00-6	Met. Corr. 1; H290 Acute Tox. 4; H302 Acute Tox. 4; H312 Aquatic Chronic 3; H412	>= 50 - < 70
C6-12-(Alkyl)alcohol,ethoxylated	68439-45-2	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 3 - < 10

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For explanation of abbreviations see section 16.

Eastman is committed to the safety, health and environment of our employees, our customers, and the communities we operate within. As part of this commitment, Eastman's Safety Data Sheets (SDS) are prepared in accordance with all applicable national and local regulations. The compositions of our documents reflect these requirements which include, but are not limited to, requirements under the Globally Harmonized System of Classification and Labeling (GHS). These compositions commonly involve the use of ranges versus specific analytical values. If you require a composition that is more specific, please refer to the Certificate of Analysis, sales specification, or contact your Customer Service Representative.

SECTION 4: First aid measures

4.1 Description of first aid measures

- If inhaled : Remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention if symptoms occur.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Take off all contaminated clothing immediately.
Get medical attention immediately if irritation persists.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Get medical attention if symptoms occur.
- If swallowed : Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : sweating
Dizziness
Headache
- Risks : Harmful if swallowed.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂)
Dry chemical
Water spray
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous combustion products : Carbon monoxide
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

Further information : None known.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.

Do not contaminate water.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin, eyes and clothing.
Do not swallow.
Wash thoroughly after handling.

Advice on protection against fire and explosion : None known.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed.

7.3 Specific end use(s)

Specific use(s) : Plant growth regulator

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye/face protection : Safety glasses

Hand protection

Remarks : Neoprene gloves Rubber gloves The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Skin and body protection : Complete suit protecting against chemicals

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Protective measures : Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Ensure that eye flushing systems and safety showers are located close to the working place.
Use personal protective equipment as required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Physical state	:	liquid
Colour	:	gold
Odour	:	amine-like
Odour Threshold	:	not determined
Melting point/range	:	not determined
	:	> 100 °C
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Flash point	:	Not applicable
Auto-ignition temperature	:	> 350 °C
Decomposition temperature	:	not determined
pH	:	4 - 5.7
Viscosity		
Viscosity, dynamic	:	42.6 mPa.s (20 °C)
Viscosity, kinematic	:	not determined
Solubility(ies)		
Water solubility	:	> 886 g/l
Partition coefficient: n-octanol/water	:	log Pow: -3
Vapour pressure	:	< 0.00001 hPa (20 °C)
Relative density	:	No data available
Density	:	1.13 g/cm ³
Relative vapour density	:	not determined

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	Not classified
Flammability (liquids)	:	The product is not flammable.

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Evaporation rate : not determined

SECTION 10: Stability and reactivity

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Strong acids and oxidizing agents
Metals
Water

10.6 Hazardous decomposition products

Carbon dioxide (CO₂)
Carbon monoxide

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : LD50 (Rat): 300 - 2,000 mg/kg

Remarks: Harmful if swallowed.

Acute inhalation toxicity : LC50 (Rat): > 5.32 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Remarks: No significant adverse effects were reported

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Remarks: No significant adverse effects were reported

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Components:

Chloromequat chloride:

Acute oral toxicity : LD50 Oral (Rat): 520 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rabbit): 1,250 mg/kg
LD50 Dermal (Rat): > 2,000 mg/kg

C6-12-(Alkyl)alcohol,ethoxylated:

Acute oral toxicity : LD50 Oral (Mouse): 528 mg/kg
Remarks: Harmful if swallowed.

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : No skin irritation

Components:

Chloromequat chloride:

Species : Rabbit
Exposure time : 24 h
Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : No eye irritation

Components:

Chloromequat chloride:

Species : Rabbit
Result : No eye irritation

C6-12-(Alkyl)alcohol,ethoxylated:

Assessment : Causes serious eye damage.
Result : Corrosive

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Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Result : Did not cause sensitization on laboratory animals.

Components:

Chloromequat chloride:

Result : Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Not classified based on available information.

Product:

Germ cell mutagenicity- Assessment : Did not show mutagenic effects in animal experiments.

Components:

Chloromequat chloride:

Germ cell mutagenicity- Assessment : Did not show mutagenic effects in animal experiments.

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

Components:

Chloromequat chloride:

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

Not classified based on available information.

Product:

Reproductive toxicity - Assessment : No toxicity to reproduction
Did not show teratogenic effects in animal experiments.

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Components:

Chloromequat chloride:

Reproductive toxicity - Assessment : No toxicity to reproduction
Did not show teratogenic effects in animal experiments.

STOT - single exposure

Not classified based on available information.

Product:

Remarks : No data available

STOT - repeated exposure

Not classified based on available information.

Product:

Remarks : No data available

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Experience with human exposure

Product:

Ingestion : Remarks: Harmful if swallowed.

Further information

Product:

Remarks : None known.

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SECTION 12: Ecological information

12.1 Toxicity

Product:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.7 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
- EC10 (Lemna gibba (gibbous duckweed)): 0.113 mg/l

Components:

Chloromequat chloride:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 31.7 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Lemna gibba (gibbous duckweed)): 28 mg/l
Exposure time: 7 d
- ErC10 (Lemna gibba (gibbous duckweed)): 0.6 mg/l
Exposure time: 7 d
- NOEC (Lemna gibba (gibbous duckweed)): 0.1 mg/l
- Toxicity to microorganisms : IC50 (Bacteria): 43 mg/l
Exposure time: 3 h
- Toxicity to fish (Chronic toxicity) : NOEC: 43.1 mg/l
Exposure time: 21 d
Species: Oncorhynchus mykiss (rainbow trout)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 2.4 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

12.2 Persistence and degradability

Product:

- Biodegradability : Biodegradation: 50 %
Exposure time: 26 - 34 d

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Components:

Chloromequat chloride:

Biodegradability : Result: Readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Product:

Stability in soil : Remarks: Not expected to adsorb on soil.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

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ADR : UN 1760
IMDG : UN 1760
IATA : UN 1760

14.2 UN proper shipping name

ADR : CORROSIVE LIQUID, N.O.S.
(Chlormequat chloride)
IMDG : CORROSIVE LIQUID, N.O.S.
(Chlormequat chloride)
IATA : Corrosive liquid, n.o.s.
(Chlormequat chloride)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 8	
IMDG	: 8	
IATA	: 8	

14.4 Packing group

ADR
Packing group : III
Classification Code : C9
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : (E)

IMDG
Packing group : III
Labels : 8
EmS Code : F-A, S-B

IATA (Cargo)
Packing instruction (cargo aircraft) : 856
Packing instruction (LQ) : Y841
Packing group : III
Labels : Corrosive

IATA (Passenger)
Packing instruction (passenger aircraft) : 852
Packing instruction (LQ) : Y841
Packing group : III
Labels : Corrosive

14.5 Environmental hazards

ADR
Environmentally hazardous : no

IMDG

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Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. E2 ENVIRONMENTAL HAZARDS

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

KECI : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

None.

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SECTION 16: Other information

Full text of H-Statements

H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H312 : Harmful in contact with skin.
H318 : Causes serious eye damage.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to Metals

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Acute Tox. 4 H302

Classification procedure:

On basis of test data.

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Aquatic Chronic 3	H412	On basis of test data.
Met. Corr. 1	H290	

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

IE / EN