1.3

Details of the supplier of the safety data sheet

Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment sheet:

e-mail (competent person):

1.4 **Emergency telephone number**

Name	Stre	et Postal code/city	Telephone /	Website
National Poisons Ir Service City Hospi		y Rd B187QH Birminghar	844 892 0111 m	

Safety data sheet Safety data sheet acc. to Regulation (EC) No. 1907/2006 (REACH)

Malachite green hydrochloride p.a.

article number: 7710 Version: 3.0 en Replaces version of: 2022-05-02 Version: (2)

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

7710

123333-61-9

Basic green 4

Product identifier 1.1

Identification of the substance

Article number

CAS number

Alternative name(s)

Uses advised against:

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

Relevant identified uses:

Laboratory chemical Laboratory and analytical use

sicherheit@carlroth.de

Malachite green hydrochloride p.a.

Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feedingstuffs.

Carl Roth GmbH + Co. KG

Telephone:+49 (0) 721 - 56 06 0 Telefax: +49 (0) 721 - 56 06 149

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

SECTION 2: Hazards identification

Classification of the substance or mixture 2.1

Classification acc. to GHS



date of compilation: 2020-06-04 Revision: 2024-03-02

acc. to Regulation (EC) No. 1907/2006 (REACH)

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Malachite green hydrochloride p.a.

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Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	3	Acute Tox. 3	H301
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.7	Reproductive toxicity	2	Repr. 2	H361fd
4.1A	Hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	Hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word Danger

Pictograms

GHS05, GHS06, GHS08, GHS09



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Hazard statements

H301	Toxic if swallowed
H318	Causes serious eye damage
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child
H410	Very toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P202	Do not handle until all safety precautions have been read and understood
P280	Wear protective gloves/protective clothing/eye protection/face protection

Precautionary statements - response

P308+P313	IF exposed or concerned: Get medical advice/attention
P391	Collect spillage

Precautionary statements - storage

P405 Store locked up

For professional users only

acc. to Regulation (EC) No. 1907/2006 (REACH)

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2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\ge 0,1\%$.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Malachite green hydrochloride
Molecular formula	$C_{23}H_{26}N_2O\cdotHCI$
Molar mass	382,9 ^g / _{mol}
CAS No	123333-61-9

Substance, Specific Conc. Limits, M-factors, ATE

Specific Conc. Limits M-Factors		ATE	Exposure route
-	M-factor (acute) = 10	>50 ^{mg} / _{kg}	oral

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Rinse mouth immediately and drink plenty of water. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed

none



acc. to Regulation (EC) No. 1907/2006 (REACH)



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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible.

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

acc. to Regulation (EC) No. 1907/2006 (REACH)



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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid exposure. Avoid dust formation. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Store locked up.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m ³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur i Inhalable fraction r_____ Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

acc. to Regulation (EC) No. 1907/2006 (REACH)



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8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a consider-able reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

acc. to Regulation (EC) No. 1907/2006 (REACH)

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SECTION 9: Physical and chemical properties

9.1	Information on basic physical and chemical properties				
	Physical state	solid			
	Form	powder, crystalline			
	Colour	dark green - brown			
	Odour	characteristic			
	Melting point/freezing point	not determined			
	Boiling point or initial boiling point and boiling range	not determined			
	Flammability	this material is combustible, but will not ignite readily			
	Lower and upper explosion limit	not determined			
	Flash point	not applicable			
	Auto-ignition temperature	not determined			
	Decomposition temperature	not relevant			
	pH (value)	not applicable			
	Kinematic viscosity	not relevant			
	Solubility(ies)				
	Water solubility	not determined			
	Partition coefficient				
	Partition coefficient n-octanol/water (log value):	this information is not available			
	Vapour pressure	not determined			
	Density and/or relative density				
	Density	not determined			
	Relative vapour density	Information on this property is not available.			
	Particle characteristics	No data available.			
	Other safety parameters				
	Oxidising properties	none			
9.2	Other information				
	Information with regard to physical hazard classes:	hazard classes acc. to GHS (physical hazards): not relevant			
	Other safety characteristics:	There is no additional information.			

acc. to Regulation (EC) No. 1907/2006 (REACH)



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SECTION 10: Stability and reactivity

10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Toxic if swallowed.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Suspected of damaging the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

acc. to Regulation (EC) No. 1907/2006 (REACH)

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Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

Data are not available.

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

Data are not available.

• If on skin

Data are not available.

Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\ge 0,1\%$.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Theoretical Oxygen Demand (without nitrification): 2,298 $^{mg}/_{mg}$ Theoretical Oxygen Demand (with nitrification): 2,475 $^{mg}/_{mg}$ Theoretical Carbon Dioxide: 2,643 $^{mg}/_{mg}$

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\ge 0,1\%$.

12.7 Other adverse effects

Data are not available.



acc. to Regulation (EC) No. 1907/2006 (REACH)



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SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Properties of waste which render it hazardous

- **HP 4** irritant skin irritation and eye damage
- HP6 acute toxicity
- HP 10 toxic for reproduction
- HP 14 ecotoxic

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

	ADRRID	UN 2811
	IMDG-Code	UN 2811
	ICAO-TI	UN 2811
14.2	UN proper shipping name	
	ADRRID	TOXIC SOLID, ORGANIC, N.O.S.
	IMDG-Code	TOXIC SOLID, ORGANIC, N.O.S.
	ICAO-TI	Toxic solid, organic, n.o.s.
	Technical name	Malachite green hydrochloride
14.3	Transport hazard class(es)	
	ADRRID	6.1
	IMDG-Code	6.1
	ICAO-TI	6.1

Safety data sheet Safety data sheet acc. to Regulation (EC) No. 1907/2006 (REACH)



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14.4	Packing group			
	ADRRID	III		
	IMDG-Code	III		
	ICAO-TI	III		
14.5	Environmental hazards	hazardous to the aquatic environment		
14.6	Special precautions for user			
	Provisions for dangerous goods (ADR) should	be complied within the premises.		
14.7	Maritime transport in bulk according to IM	10 instruments		
	The cargo is not intended to be carried in bull	k.		
14.8	Information for each of the UN Model Regu	ulations		
	Agreement concerning the International C information	arriage of Dangerous Goods by Road (ADR)Additiona		
	Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S.		
	Particulars in the transport document	UN2811, TOXIC SOLID, ORGANIC, N.O.S., (Malachite green hydrochloride), 6.1, III, (E), envi onmentally hazardous		
	Classification code	Τ2		
	Danger label(s)	6.1, "Fish and tree"		
	Environmental hazards	Yes (hazardous to the aquatic environment)		
	Special provisions (SP)	274, 614, 802(ADN)		
	Excepted quantities (EQ)	E1		
	Limited quantities (LQ)	5 kg		
	Transport category (TC)	2		
	Tunnel restriction code (TRC)	E		
	Hazard identification No	60		
	Emergency Action Code	2X		
	Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information			
	Classification code	Т2		
	Danger label(s)	6.1, "Fish and tree"		
	Environmental hazards	Yes Hazardous to water		
	Special provisions (SP)	274, 614, 802(ADN)		
	Excepted quantities (EQ)	E1		

acc. to Regulation (EC) No. 1907/2006 (REACH)



Limited quantities (LQ)	5 kg
Transport category (TC)	2
Hazard identification No	60
International Maritime Dangerous Goods C	Code (IMDG) - Additional information
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S.
Particulars in the shipper's declaration	UN2811, TOXIC SOLID, ORGANIC, N.O.S., (Malachite green hydrochloride), 6.1, III, MAR POLLUTANT
Marine pollutant	Yes (hazardous to the aquatic environment)
Danger label(s)	6.1, "Fish and tree"
Special provisions (SP)	223, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
EmS	F-A, S-A
Stowage category	A
International Civil Aviation Organization (I	CAO-IATA/DGR) - Additional information
Proper shipping name	Toxic solid, organic, n.o.s.
Particulars in the shipper's declaration	UN2811, Toxic solid, organic, n.o.s., (Malachit green hydrochloride), 6.1, III
Environmental hazards	Yes (hazardous to the aquatic environment)
Danger label(s)	6.1
Special provisions (SP)	A3, A5
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 kg

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU) Seveso Directive

acc. to Regulation (EC) No. 1907/2006 (REACH)



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2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the ap- plication of lower and upper-tier re- quirements		Notes
H2	acute toxic (cat. 2 + cat. 3, inhal.)	50	200	41)

Notation

41) - Category 2, all exposure routes - category 3, inhalation exposure route

Deco-Paint Directive

VOC content	0 %
Industrial Emissions Directive (IED)	

Industrial Emissions Directive (IED)

VOC content

0 %

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Malachite green hydrochloride	Organohalogen compounds and substances which may form such compounds in the aquatic envir- onment		a)	
Malachite green hydrochloride	Substances and preparations, or the breakdown products of such, which have been proved to pos- sess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine- related functions in or via the aquatic environment		a)	

Legend

Indicative list of the main pollutants a)

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC) not listed

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Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list not listed

Restrictions according to GB REACH, Annex 17

not listed

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

Country	Inventory	Status
TW	TCSI	substance is listed
Legend		

TCSI Taiwan Chemical Substance Inventory

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2		Hazard statements: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8	Classification code: 6.1	Classification code: T2	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concern- ing the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)

acc. to Regulation (EC) No. 1907/2006 (REACH)



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Abbr.	Descriptions of used abbreviations	
EmS	Emergency Schedule	
GB REACH The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amend		
GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the U tions		
ΙΑΤΑ	International Air Transport Association	
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)	
ICAO	International Civil Aviation Organization	
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air	
IMDG	International Maritime Dangerous Goods Code	
IMDG-Code	International Maritime Dangerous Goods Code	
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present	
РВТ	Persistent, Bioaccumulative and Toxic	
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals	
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)	
STEL	Short-term exposure limit	
TWA	Time-weighted average	
VOC	Volatile Organic Compounds	
vPvB	Very Persistent and very Bioaccumulative	
WEL	Workplace exposure limit	

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text	
H301	Toxic if swallowed.	
H318	Causes serious eye damage.	
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.	
H400	Very toxic to aquatic life.	
H410	Very toxic to aquatic life with long lasting effects.	

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.