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

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

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Version: (1)

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

Product identifier 1.1

Identification of the substance Cacodylic acid sodium salt trihydrate PUFFER-

AN® ≥98 %

Article number 5169

It is not required to list the identified uses be-Registration number (REACH)

cause the substance is not subject to registration

according to REACH (< 1 t/a).

Index number in CLP Annex VI 033-002-00-5

EC number 204-708-2 CAS number 6131-99-3

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes

(household).

Details of the supplier of the safety data sheet 1.3

Carl Roth GmbH + Co KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

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

sheet:

sicherheit@carlroth.de e-mail (competent person):

1.4 **Emergency telephone number**

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

United Kingdom (en) Page 1 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	3	Acute Tox. 3	H301
3.1I	Acute toxicity (inhal.)	3	Acute Tox. 3	H331
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 according to Regulation (EC) No 1272/2008 (CLP)

Signal word Danger

Pictograms

GHS06, GHS09





Hazard statements

H301+H331 Toxic if swallowed or if inhaled

H410 Very toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dusts or mists P273 Avoid release to the environment

Precautionary statements - response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)





H301+H331 Toxic if swallowed or if inhaled.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

United Kingdom (en) Page 2 / 17

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

ROTH

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

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.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Cacodylic acid sodium salt trihydrate

Molecular formula $C_2H_6AsNaO_2 \cdot 3H_2O$

Molar mass 214 ^g/_{mol}

CAS No 6131-99-3

EC No 204-708-2

Index No 033-002-00-5

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

Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	100 ^{mg} / _{kg} 0,7 ^{mg} / _l /4h	oral inhalation: dust/ mist

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Self-protection of the first aider.

Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

Following skin contact

Rinse skin with water/shower.

Following eye contact

Rinse cautiously with water for several minutes.

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

United Kingdom (en) Page 3 / 17

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

ROTH

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

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

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated: Carbon monoxide (CO₂), 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.

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.

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.

United Kingdom (en) Page 4 / 17

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

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 7: Handling and storage

Precautions for safe handling

Use extractor hood (laboratory). 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

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. 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

Control parameters 8.1

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Coun	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	arsenic compounds		WEL	0,1			As	EH40/2005
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

Notation

Calculated as As (arsenic)

Ceiling value is a limit value above which exposure should not occur Ceiling-C

Inhalable fraction Respirable fraction

. STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified)
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) **TWA**

United Kingdom (en) Page 5 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

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 considerable 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.

United Kingdom (en) Page 6 / 17

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

®

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state solid

Form crystals
Colour white

Odour odourless Melting point/freezing point $77 - 80 \, ^{\circ}\text{C}$

Boiling point or initial boiling point and boiling not determined

range

Flammability non-combustible
Lower and upper explosion limit not determined
Flash point not applicable
Auto-ignition temperature not determined

Decomposition temperature >300 °C

pH (value) 8 – 9 (in aqueous solution: 50 ^g/_l, 20 °C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility 880 ^g/_l at 20 °C

Partition coefficient

Partition coefficient n-octanol/water (log value): -1,55 (pH value: 7, 25 °C)

Vapour pressure not determined

Density and/or relative density

Density $0.8 \, \mathrm{g}/\mathrm{cm}^3$

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 hazard classes acc. to GHS

classes: (physical hazards): not relevant

Other safety characteristics: There is no additional information.

United Kingdom (en) Page 7 / 17

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

ROTH

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

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

Keep away from heat. Decompostion takes place from temperatures above: >300 °C.

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

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Toxic if swallowed. Toxic if inhaled.

Acute toxicity

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	2.000 ^{mg} / _{kg}	rat		
oral	LD50	2.600 ^{mg} / _{kg}	rat		TOXNET
oral	LD50	4 ^{mg} / _{kg}	mouse		GESTIS
inhalation: dust/ mist	LC50	5,12 ^{mg} / _l /4h	monkey		
dermal	LD50	>2.000 ^{mg} / _{kg}	rabbit		

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

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.

United Kingdom (en) Page 8 / 17

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

ROTH

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

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.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

Data are not available.

• If in eyes

Data are not available.

If inhaled

Data are not available.

• If on skin

Data are not available.

Other information

Substance not yet fully tested. Headache, Spasms, Nausea, Vertigo, Diarrhoea

11.2 Endocrine disrupting properties

Not listed.

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.

Aquatic toxicity (acute)

•				
Endpoint	Value	Species	Source	Exposure time
LC50	>152 ^{mg} / _l	rainbow trout (Onco- rhynchus mykiss)		96 h
LC50	>61,6 ^{mg} / _l	daphnia magna		48 h

Biodegradation

Data are not available.

12.2 Process of degradability

Theoretical Oxygen Demand: 0,4111 $^{mg}/_{mg}$ Theoretical Carbon Dioxide: 0,4112 $^{mg}/_{mg}$

United Kingdom (en) Page 9 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	-1,55 (pH value: 7, 25 °C)
11-octation water (log ROW)	-1,33 (pri value. 7, 23 °C)

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

Not listed.

12.7 Other adverse effects

Data are not available.

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.

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. Waste catalogue ordinance (Germany).

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.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN UN 1688
IMDG-Code UN 1688
ICAO-TI UN 1688

14.2 UN proper shipping name

ADR/RID/ADN SODIUM CACODYLATE IMDG-Code SODIUM CACODYLATE ICAO-TI Sodium cacodylate

United Kingdom (en) Page 10 / 17

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

®

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

14.3	Transport	hazard	class	(es)

ADR/RID/ADN 6.1
IMDG-Code 6.1
ICAO-TI 6.1

14.4 Packing group

ADR/RID/ADN II
IMDG-Code II
ICAO-TI II

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 IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Proper shipping name SODIUM CACODYLATE

Particulars in the transport document UN1688, SODIUM CACODYLATE, 6.1, II, (D/E), en-

vironmentally hazardous

Classification code T5

Danger label(s) 6.1, "Fish and tree"

Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 802(ADN)

Excepted quantities (EQ)

Limited quantities (LQ)

Transport category (TC)

Tunnel restriction code (TRC)

Hazard identification No

Emergency Action Code

24

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International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name SODIUM CACODYLATE

Particulars in the shipper's declaration UN1688, SODIUM CACODYLATE, 6.1, II, MARINE

POLLUTANT

Marine pollutant yes (hazardous to the aquatic environment)

Danger label(s) 6.1, "Fish and tree"

United Kingdom (en) Page 11 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169



Special provisions (SP)

Excepted quantities (EQ) F4

Limited quantities (LQ) 500 g F-A, S-A **EmS**

Stowage category

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Sodium cacodylate

Particulars in the shipper's declaration UN1688, Sodium cacodylate, 6.1, II

Environmental hazards yes (hazardous to the aquatic environment)

Danger label(s) 6.1



Excepted quantities (EQ) **E4** Limited quantities (LQ) 1 kg

SECTION 15: Regulatory information

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

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)

Name of substance	Name acc. to inventory	CAS No	Restriction	No
Cacodylic acid sodium salt trihydrate	arsenic compounds		R19	19

Legend

- Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use to prevent the fouling by micro-organisms, plants or animals of: - the hulls of boats,
- cages, floats, nets and any other appliances or equipment used for fish or shellfish farming,
- any totally or partly submerged appliances or equipment.
- Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use in the treatment of industrial waters, irrespective of their use.

 3. Shall not be used in the preservation of wood. Furthermore, wood so treated shall not be placed on the market.

- 4. By way of derogation from paragraph 3:
 (a) Relating to the substances and mixtures for the preservation of wood: these may only be used in industrial installations using vacuum or pressure to impregnate wood if they are solutions of inorganic compounds of the copper, chromium, arsenic (CCA) type C and if they are authorised in accordance with Article 5(1) of Directive 98/8/EC. Wood so treated shall not be placed on the market before fixation of the preservative is completed.
- (b) Wood treated with CCA solution in accordance with point (a) may be placed on the market for professional and industrial use provided that the structural integrity of the wood is required for human or livestock safety and skin contact by the general public during its service life is unlikely:

 as structural timber in public and agricultural buildings, office buildings, and industrial premises,
- in bridges and bridgework
- as constructional timber in freshwater areas and brackish waters, for example jetties and bridges,
- as noise barriers,
- in avalanche control,
- in highway safety fencing and barriers, as debarked round conifer livestock fence posts,
- in earth retaining structures, as electric power transmission and telecommunications poles,
- as underground railway sleepers.
- (c) Without prejudice to the application of other Community provisions on the classification, packaging and labelling

United Kingdom (en) Page 12 / 17

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

Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

Legend

of substances and mixtures, suppliers shall ensure before the placing on the market that all treated wood placed on the market is individually labelled 'For professional and industrial installation and use only, contains arsenic'. In addition, all wood placed on the market in packs shall also bear a label stating 'Wear gloves when handling this wood. Wear a dust mask and eye protection when cutting or otherwise crafting this wood. Waste from this wood shall be treated as hazardous by an authorised undertaking'. (d) Treated wood referred to under point (a) shall not be used:

- in residential or domestic constructions, whatever the purpose, in any application where there is a risk of repeated skin contact,

- in márine waters,

- for agricultural purposes other than for livestock fence posts and structural uses in accordance with point (b), - in any application where the treated wood may come into contact with intermediate or finished products intended

for human and/or animal consumption.

5. Wood treated with arsenic compounds that was in use in the Community before 30 September 2007, or that was placed on the market in accordance with paragraph 4 may remain in place and continue to be used until it reaches the end of its service life.

6. Wood treated with CCA type C that was in use in the Community before 30 September 2007, or that was placed on the market in accordance with paragraph 4:

- may be used or reused subject to the conditions pertaining to its use listed under points 4(b), (c) and (d),

- may be placed on the market subject to the conditions pertaining to its use listed under points 4(b), (c) and (d).
 7. Member States may allow wood treated with other types of CCA solutions that was in use in the Community before 30 September 2007:
- to be used or reused subject to the conditions pertaining to its use listed under points 4 (b), (c) and (d),
- to be placed on the market subject to the conditions pertaining to its use listed under points 4(b), (c) and (d).

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

Not listed.

Seveso Directive

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

Notation

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

Deco-Paint Directive

	VOC content	0 %
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Industrial Emissions Directive (IED)

VOC content	0 %
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Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

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

not listed

Water Framework Directive (WFD)

Page 13 / 17 United Kingdom (en)

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

List of pollutants (WFD)

Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Cacodylic acid sodium salt tri- hydrate	Metals and their compounds		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)

chemicals subject to the international prior informed consent (PIC) procedure (the 'PIC procedure').

Name of substance	Name acc. to inventory	CAS No	Category / subcategory	Use limita- tion
Cacodylic acid sodium salt tri- hydrate	arsenic compounds		p(2)	sr

Legend

p(2) Sub-category: p(2) - other pesticide including biocides

Use limitation: severe restriction (for the sub-category or sub-categories concerned) according to Union legislation

Regulation on persistent organic pollutants (POP)

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
CN	IECSC	substance is listed
EU	ECSI	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed

Legend

ECSI

EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China

NZIoC

New Zealand Inventory of Chemicals Philippine Inventory of Chemicals and Chemical Substances (PICCS) Taiwan Chemical Substance Inventory

15.2 Chemical Safety Assessment

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

United Kingdom (en) Page 14 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Alignment to regulation: Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

Restructuring: section 9, section 14

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.1		Classification according to Regulation (EC) No 1272/2008 (CLP): change in the listing (table)	yes
2.1	Remarks: For full text of Hazard- and EU Hazard-state- ments: see SECTION 16.		yes
2.1		The most important adverse physicochemical, human health and environmental effects: Spillage and fire water can cause pollution of watercourses.	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3	Other hazards: There is no additional information.	Other hazards	yes
2.3		Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations			
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de naviga- tion intérieures (European Agreement concerning the International Carriage of Dangerous Goods by In- land Waterways)			
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)			
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)			
ATE	Acute Toxicity Estimate			
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)			
Ceiling-C	Ceiling value			
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures			
DGR	Dangerous Goods Regulations (see IATA/DGR)			
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)			

United Kingdom (en) Page 15 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) EINECS European Inventory of Existing Commercial Chemical Substances ELINCS European List of Notified Chemical Substances EMS Emergency Schedule GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA 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 IMDG-Code International Maritime Dangerous Goods Code Index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	Abbr.	Descriptions of used abbreviations
ELINCS European List of Notified Chemical Substances EmS Emergency Schedule GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA 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 IMDG-Code International Maritime Dangerous Goods Code Index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	EH40/2005	
EmS Emergency Schedule GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA 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 IMDG-Code International Maritime Dangerous Goods Code Index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethallty during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	EINECS	European Inventory of Existing Commercial Chemical Substances
GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA 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 IMDG-Code International Maritime Dangerous Goods Code International Maritime Dangerous Goods Code ICCO Lethal Concentration 50%: the LC50 corresponds to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	ELINCS	European List of Notified Chemical Substances
IATA 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 index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	EmS	Emergency Schedule
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 IMDG-Code International Maritime Dangerous Goods Code Index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	GHS	
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IMDG International Maritime Dangerous Goods Code IMDG-Code International Maritime Dangerous Goods Code index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethallity during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	ICAO	International Civil Aviation Organization
IMDG-Code International Maritime Dangerous Goods Code index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
index No The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds Very Persistent and very Bioaccumulative	IMDG	International Maritime Dangerous Goods Code
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NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
PBT Persistent, Bioaccumulative and Toxic REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds vPvB Very Persistent and very Bioaccumulative	LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	NLP	No-Longer Polymer
RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	PBT	Persistent, Bioaccumulative and Toxic
tions concerning the International carriage of Dangerous goods by Rail) STEL Short-term exposure limit SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds VPVB Very Persistent and very Bioaccumulative	REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC Substance of Very High Concern TWA Time-weighted average VOC Volatile Organic Compounds vPvB Very Persistent and very Bioaccumulative	RID	
TWA Time-weighted average VOC Volatile Organic Compounds vPvB Very Persistent and very Bioaccumulative	STEL	Short-term exposure limit
VOC Volatile Organic Compounds vPvB Very Persistent and very Bioaccumulative	SVHC	Substance of Very High Concern
vPvB Very Persistent and very Bioaccumulative	TWA	Time-weighted average
.,	VOC	Volatile Organic Compounds
WEL Workplace exposure limit	vPvB	Very Persistent and very Bioaccumulative
	WEL	Workplace exposure limit

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

United Kingdom (en) Page 16 / 17

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



Cacodylic acid sodium salt trihydrate PUFFERAN® ≥98 %

article number: 5169

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

Code	Text
H301	Toxic if swallowed.
H331	Toxic if inhaled.
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.

United Kingdom (en) Page 17 / 17