

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: T0614

Issue date: 21/11/2023 Revision date: 21/11/2023 Supersedes version of: 24/01/2019 Version: 3.0

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

### 1.1. Product identifier

Product form	: Substance
Trade name	: Thiamine hydrochloride
EC-No.	: 200-641-8
CAS-No.	: 67-03-8
REACH registration No.	: 01-2120773699-31-xxxx
Product code	: T0614
Formula	: C <sub>12</sub> H <sub>17</sub> ClN <sub>4</sub> OS · HCl
Product group	: Raw material

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

#### 1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

#### Distributor

Duchefa Biochemie B.V.  
A. Hofmanweg 71  
2031 BH Haarlem  
The Netherlands  
T +31(0)23-5319093 - F +31(0)23-5318027  
[info@duchefa.nl](mailto:info@duchefa.nl)

### 1.4. Emergency telephone number

Emergency number	: Supplier contact information: +31(0)23-5319093 (M-F 09:00-17:00) +31(0)6-30008100 (outside office hours)
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Country	Organisation/Company	Address	Emergency number	Comment
	World Health Organization world directory of poison centres	<a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a>		Consult website for a local poison centre

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 2 H319

Full text of H- and EUH-statements: see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)

:



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H319 - Causes serious eye irritation.

Precautionary statements (CLP)

: P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P337+P313 - If eye irritation persists: Get medical advice/attention.

### 2.3. Other hazards

Other hazards which do not result in classification

: Potential dust explosion hazard.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type

: Mono-constituent

Name	Product identifier	%
Thiamine hydrochloride	CAS-No.: 67-03-8 EC-No.: 200-641-8 REACH-no: 01-2120773699-31-xxxx	≥ 98,5

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general

: If you feel unwell, seek medical advice.

First-aid measures after inhalation

: Allow affected person to breathe fresh air.

First-aid measures after skin contact

: Wash skin with mild soap and water.

First-aid measures after eye contact

: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion

: Rinse mouth out with water.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects

: Gastrointestinal complaints.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media

: Water. Foam.

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### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : - SO<sub>x</sub>. Corrosive vapours. Carbon oxides (CO, CO<sub>2</sub>). - NO<sub>x</sub>.

### 5.3. Advice for firefighters

Protection during firefighting : Wear proper protective equipment. Self-contained breathing apparatus.  
Other information : Prevent fire fighting water from entering the environment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing.  
Measures in case of dust release : Avoid dust formation.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent product from entering drains.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up, shovel or vacuum. This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

Reference to other sections (8, 13).

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

No additional information available

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed and dry. Store at room temperature.

### 7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

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### 8.1.4. DNEL and PNEC

<b>Thiamine hydrochloride (67-03-8)</b>	
<b>DNEL/DMEL (Workers)</b>	
Long-term - systemic effects, dermal	3,3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	11 mg/m <sup>3</sup>
<b>DNEL/DMEL (General population)</b>	
Long-term - systemic effects, oral	1,6 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2,8 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	1,6 mg/kg bodyweight/day
<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	0,1 mg/l
PNEC aqua (marine water)	0,01 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC aqua (intermittent, marine water)	0,1 mg/l
<b>PNEC (Sediment)</b>	
PNEC sediment (freshwater)	0,363 mg/kg dwt
PNEC sediment (marine water)	0,0363 mg/kg dwt
<b>PNEC (Soil)</b>	
PNEC soil	0,0139 mg/kg dwt
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	2,17 mg/l

### 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

No additional information available

### 8.2.2. Personal protection equipment

#### 8.2.2.1. Eye and face protection

<b>Eye protection</b>			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust		EN 166

#### 8.2.2.2. Skin protection

##### Skin and body protection:

In case of possible repeated skin contact wear protective clothing

<b>Hand protection</b>					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11		EN ISO 374

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### 8.2.2.3. Respiratory protection

#### Respiratory protection:

Dust production: dust mask with filter type P1

### 8.2.2.4. Thermal hazards

No additional information available

### 8.2.3. Environmental exposure controls

No additional information available

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: White to off-white.
Appearance	: Powder.
Molecular mass	: 337,3 g/mol
Odour	: Characteristic.
Odour threshold	: Not available
Melting point	: 248 – 250 °C
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: 2,7 – 3,3
pH solution concentration	: 2,5 %
Viscosity, kinematic	: Not applicable
Solubility	: Readily soluble in water. Water: 500 g/l (20 °C, pH 2,1)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: < -3,04 22,5 °C
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: 0,4 g/cm <sup>3</sup>
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

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### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Potential dust explosion hazard.

### 10.4. Conditions to avoid

- Heat. Water, humidity.

### 10.5. Incompatible materials

Bases. - Metals. Oxidising agents.

### 10.6. Hazardous decomposition products

Hydrogen chloride. Nitrogen oxides. - SOx.

## SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified  
 Acute toxicity (dermal) : Not classified  
 Acute toxicity (inhalation) : Not classified

Thiamine hydrochloride (67-03-8)	
LD50 oral rat	12340 mg/kg bodyweight Animal: rat, 95% CL: 10340 - 14340
LD50 oral	13347 mg/kg bodyweight Animal: mouse, 95% CL: 11527 - 15167

Skin corrosion/irritation : Slightly irritating to the skin  
 pH: 2,7 – 3,3  
 Serious eye damage/irritation : May cause eye irritation.  
 pH: 2,7 – 3,3  
 Respiratory or skin sensitisation : Not classified  
 Germ cell mutagenicity : Not classified  
 Carcinogenicity : Not classified  
 Reproductive toxicity : Not classified  
 STOT-single exposure : Not classified  
 STOT-repeated exposure : Not classified

Thiamine hydrochloride (67-03-8)	
NOAEL (oral, rat, 90 days)	≥ 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:

Aspiration hazard : Not classified

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

#### 11.2.2. Other information

Other information : See actual entry in RTECS for complete information: XI7350000

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### SECTION 12: Ecological information

#### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Thiamine hydrochloride (67-03-8)	
LC50 - Fish [1]	> 100 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

#### 12.2. Persistence and degradability

Thiamine hydrochloride (67-03-8)	
Persistence and degradability	Product is biodegradable.
Biodegradation	74 % (7d)

#### 12.3. Bioaccumulative potential

Thiamine hydrochloride (67-03-8)	
Partition coefficient n-octanol/water (Log Pow)	< -3,04 22,5 °C

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

#### 12.7. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations.  
 Sewage disposal recommendations : Disposal must be done according to official regulations.  
 Product/Packaging disposal recommendations : When not empty dispose of this container at hazardous or special waste collection point.  
 Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

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ADR	IMDG	IATA
<b>14.1. UN number or ID number</b>		
Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>		
Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>		
Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>		
Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>		
Not applicable	Not applicable	Not applicable
No supplementary information available		

### 14.6. Special precautions for user

#### Overland transport

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

##### REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

##### REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

##### REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

##### PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

##### POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

##### Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

##### Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

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### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

### 15.1.2. National regulations

#### Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to VwVwS, Annex 3; ID No. 3924).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen –

Borstvoeding

SZW-lijst van reprotoxische stoffen – : The substance is not listed

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – : The substance is not listed

Ontwikkeling

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes	Modified	
	Revision date	Modified	
	Substance type	Added	
	Regulatory framework	Added	
	Concentration of the solution used for the pH measurement	Added	
	Adverse health effects caused by endocrine disrupting properties	Added	
1.1	Product group	Added	
1.1	Formula	Modified	
2.2	Precautionary statements (CLP)	Modified	
8.1	PNEC sewage treatment plant	Added	
8.1	PNEC soil	Added	
8.1	PNEC sediment (marine water)	Added	
8.1	PNEC sediment (freshwater)	Added	
8.1	PNEC aqua (marine water)	Added	
8.1	PNEC aqua (intermittent, marine water)	Added	
8.1	PNEC aqua (intermittent, freshwater)	Added	
8.1	PNEC aqua (freshwater)	Added	
8.1	Long-term - systemic effects,oral	Added	

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Indication of changes			
Section	Changed item	Change	Comments
8.1	Long-term - systemic effects, inhalation	Added	
8.1	Long-term - systemic effects, inhalation	Added	
8.1	Long-term - systemic effects, dermal	Added	
8.1	Long-term - systemic effects, dermal	Added	
8.2	Skin and body protection	Modified	
9.1	Log Pow	Added	
9.1	Solubility in water	Modified	
9.1	pH	Modified	
11.1	NOAEL (oral, rat, 90 days)	Added	
11.1	ATE CLP (oral)	Added	
11.1	LD50 oral	Modified	
11.1	LD50 oral rat	Modified	
12.1	EC50 72h - Algae [1]	Added	
12.1	EC50 - Crustacea [1]	Modified	
12.3	Log Pow	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
13.1	Waste treatment methods	Modified	

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

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Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Supplier.

### Full text of H- and EUH-statements:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
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H319	Causes serious eye irritation.
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Safety Data Sheet (SDS), EU Duchefa 2023

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.