

# Guanidine hydrochloride

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 07/09/2011 Revision date: 24/11/2017

**G1375**

Version: 2.0

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

#### 1.1. Product identifier

Product form : Substance  
 Trade name : Guanidine hydrochloride  
 Chemical name : Guanidinium chloride, guanadine hydrochloride  
 EC Index-No. : 607-148-00-0  
 EC-No. : 200-002-3  
 CAS-No. : 50-01-1  
 REACH registration No : 01-2119977063-35  
 Product code : G1375  
 Formula : CH<sub>5</sub>N<sub>3</sub>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

##### Supplier

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)6-30109355 (outside office hours)

Organisation/Company	Address	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]

Acute toxicity (oral), Category 4 H302  
 Serious eye damage/eye irritation, Category 2 H319  
 Skin corrosion/irritation, Category 2 H315

Full text of hazard classes and H-statements : see section 16

## Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

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

Hazard pictograms (CLP)

:



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H302 - Harmful if swallowed.  
H319 - Causes serious eye irritation.  
H315 - Causes skin irritation

Precautionary statements (CLP)

: P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
P305+P351 - IF IN EYES: Rinse cautiously with water for several minutes.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : Guanidine hydrochloride  
CAS-No. : 50-01-1  
EC-No. : 200-002-3  
EC Index-No. : 607-148-00-0

Name	Product identifier	%
Guanidinium chloride, guanadine hydrochloride	(CAS-No.) 50-01-1 (EC-No.) 200-002-3 (EC Index-No.) 607-148-00-0	> 99,7

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Assure fresh air breathing. Seek medical advice.  
First-aid measures after skin contact : Wash skin with plenty of water. Seek medical advice.  
First-aid measures after eye contact : Rinse immediately with plenty of water. Get immediate medical advice/attention.  
First-aid measures after ingestion : Rinse mouth. Get medical advice/attention.

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

Symptoms/effects : Diarrhea. Sleepiness.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>). Water spray.

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

Hazardous decomposition products in case of fire : When exposed to heat, may decompose liberating hazardous gases. CO<sub>x</sub>. NO<sub>x</sub>.

### 5.3. Advice for firefighters

Protection during firefighting : Wear proper protective equipment.

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

Measures in case of dust release : Avoid dust formation.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

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

Methods for cleaning up : Sweep up dry powder and dispose properly.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation.

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

Storage conditions : Store at room temperature. Store in dry, well-ventilated area. Hygroscopic.

### 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

<b>Guanidine hydrochloride (50-01-1)</b>
DNEL/DMEL (Workers)

# Guanidine hydrochloride

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<b>Guanidine hydrochloride (50-01-1)</b>	
Acute - systemic effects, inhalation	10,5 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3,5 mg/m <sup>3</sup>
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0,5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0,87 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	0,5 mg/kg bodyweight/day

### 8.2. Exposure controls

#### Hand protection:

Type	Material	Permeation	Thickness (mm)	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11	EN 374

#### Eye protection:

Safety glasses (to European standard EN 166 or equivalent)

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

Wear approved mask. Filter type P1 (EN 143)

## SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Appearance	: Powder. Crystalline powder.
Molecular mass	: 95,53 g/mol
Colour	: Colourless.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 4,8 (200 g/l, 25°C)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 178 - 185 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: ≈ 231 °C (exothermic reaction)
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1,345 g/cm <sup>3</sup> (20 °C)
Solubility	: Water: 2280 g/l (30 °C)
Log Pow	: ≈ -1,7 (20 °C)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosive properties : No data available  
Oxidising properties : No data available  
Explosive limits : No data available

### 9.2. Other information

Bulk density :  $\approx 800 \text{ kg/m}^3$

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

Stable under normal conditions of storage, handling and use.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Overheating. Moisture. Heat.

### 10.5. Incompatible materials

Strong oxidizers. Strong bases. Strong acids.

### 10.6. Hazardous decomposition products

When heated to decomposition, emits dangerous fumes. COx. NOx.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Guanidine hydrochloride (50-01-1)	
LD50 oral rat	475 mg/kg
LD50 oral	571 mg/kg (mouse)
LC50 inhalation rat (Dust/Mist - mg/l/4h)	5,3 mg/l/4h (OECD Guideline 403)

Skin corrosion/irritation : Causes skin irritation.  
pH: 4,8 (200 g/l, 25°C)

Serious eye damage/irritation : Causes serious eye irritation.  
pH: 4,8 (200 g/l, 25°C)

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

Aspiration hazard : Not classified

Other information : See actual entry in RTECS for complete information: MF430000.

**SECTION 12: Ecological information****12.1. Toxicity**

<b>Guanidine hydrochloride (50-01-1)</b>	
LC50 fish 1	1759 mg/l <i>Leuciscus idus</i> (golden orfe)

**12.2. Persistence and degradability**

No additional information available

**12.3. Bioaccumulative potential**

<b>Guanidine hydrochloride (50-01-1)</b>	
Log Pow	≈ -1,7 (20 °C)

**12.4. Mobility in soil**

No additional information available

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

No additional information available

**12.6. Other adverse effects**

Additional information : Prevent entry to sewers and public waters. Avoid release to the environment

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.

**SECTION 14: Transport information**

In accordance with ADR / IATA / IMDG

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

**14.6. Special precautions for user****Overland transport**

Not regulated

**- Transport by sea**

Not regulated

**- Air transport**

Not regulated

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

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**

No REACH Annex XVII restrictions

Guanidine hydrochloride is not on the REACH Candidate List

Guanidine hydrochloride is not on the REACH Annex XIV List

**15.1.2. National regulations**

Ensure all national/local regulations are observed.

**Germany**

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 788)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**

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

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

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

**15.2. Chemical safety assessment**

No additional information available

## SECTION 16: Other information

Indication of changes:

1.4	Emergency number	Modified	
2.2	Precautionary statements (CLP)	Added	P302+P352
8.2	Hand protection	Modified	Specified material, thickness, et cetera of gloves

Abbreviations and acronyms:

# Guanidine hydrochloride

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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

Data sources : ECHA (European Chemicals Agency). Supplier.

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H302	Harmful if swallowed.
H315	Causes skin irritation
H319	Causes serious eye irritation.

SDS Biochemicals version 2017

*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*