




## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 **Product identifier:** 1100 - Guanidine 8M hydrochloride solution  
guanidinium chloride  
**CAS:** 50-01-1  
**Other means of identification:**  
Non-applicable
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant uses:** For use in laboratory and production. Not for human or animal use . For professional users/industrial user only.  
**Uses advised against (Professional users):** Not for human or animal use
- 1.3 **Details of the supplier of the safety data sheet:**  
GERBU Biotechnik GmbH  
69123 Heidelberg - Germany  
Phone: +49 6221 7264167  
safety@gerbu.de  
www.gerbu.de
- 1.4 **Emergency telephone number:**

## SECTION 2: HAZARDS IDENTIFICATION

- 2.1 **Classification of the substance or mixture:**  
**GB CLP Regulation:**  
Classification of this product has been carried out in accordance with GB CLP Regulation.  
Acute Tox. 4: Acute toxicity, Category 4, H302+H332  
Eye Irrit. 2: Eye irritation, Category 2, H319  
Skin Irrit. 2: Skin irritation, Category 2, H315
- 2.2 **Label elements:**  
**GB CLP Regulation:**  
**Warning**  
  
**Hazard statements:**  
Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled.  
Eye Irrit. 2: H319 - Causes serious eye irritation.  
Skin Irrit. 2: H315 - Causes skin irritation.  
**Precautionary statements:**  
P264: Wash thoroughly after use.  
P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.  
P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+P313: If skin irritation occurs: Get medical advice/attention.  
P337+P313: If eye irritation persists: Get medical advice/attention.
- 2.3 **Other hazards:**  
Product fails to meet PBT/vPvB criteria


## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 **Substance:**  
**Chemical description:** Mixture of substances  
**Components:**  
In accordance with Annex II of The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, the product contains:

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### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Identification	Chemical name/Classification	Concentration
CAS: 50-01-1	<b>guanidinium chloride</b> Acute Tox. 4: H302+H332; Eye Irrit. 2: H319; Skin Irrit. 2: H315 - Warning	 75 - <100 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

#### 3.2 Mixture:

Non-applicable

### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

##### By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

##### By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

##### By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

##### By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administer anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media:

##### Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

##### Unsuitable extinguishing media:

Non-applicable

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

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

#### 5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit, ...).

##### Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures:**  
**For non-emergency personnel:**  
 Sweep up and shovel product or collect by other means and place in container for reuse (preferred) or disposal  
**For emergency responders:**  
 Wear protective equipment. Keep unprotected persons away. See section 8.
- 6.2 Environmental precautions:**  
 This product is not classified as hazardous to the environment. Keep product away from drains, surface and ground water.
- 6.3 Methods and material for containment and cleaning up:**  
 It is recommended:  
 Sweep up and shovel product or collect by other means and place in container for reuse (preferred) or disposal
- 6.4 Reference to other sections:**  
 See sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling:**
- A.- General precautions for safe use  
 Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).
- B.- Technical recommendations for the prevention of fires and explosions  
 Due to its non-inflammable nature, the product does not present a fire risk under normal conditions of storage, handling and use.
- C.- Technical recommendations on general occupational hygiene  
 Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.
- D.- Technical recommendations to prevent environmental risks  
 It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)
- 7.2 Conditions for safe storage, including any incompatibilities:**
- A.- Technical measures for storage  
 Minimum Temp.: 8 °C
- B.- General conditions for storage  
 Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5
- 7.3 Specific end use(s):**  
 Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters:**  
 Substances whose occupational exposure limits have to be monitored in the workplace:  
 Nuisance dust: Inhalable dust 10 mg/m<sup>3</sup> // Respirable dust 4 mg/m<sup>3</sup>

**DNEL (Workers):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
guanidinium chloride	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 50-01-1	Dermal	Non-applicable	Non-applicable	1 mg/kg	Non-applicable
EC: 200-002-3	Inhalation	10.5 mg/m <sup>3</sup>	Non-applicable	3.5 mg/m <sup>3</sup>	Non-applicable

**DNEL (General population):**

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
guanidinium chloride	Oral	Non-applicable	Non-applicable	0.5 mg/kg	Non-applicable
CAS: 50-01-1	Dermal	Non-applicable	Non-applicable	0.5 mg/kg	Non-applicable
EC: 200-002-3	Inhalation	Non-applicable	Non-applicable	0.87 mg/m <sup>3</sup>	Non-applicable

PNEC:


Non-applicable

8.2 Exposure controls:


A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<UKCA marking>>. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection, ...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.


B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN 420:2004+A1:2010 and EN ISO 374-1:2016+A1:2018

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Body protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 6529:2013, EN ISO 6530:2005, EN ISO 13688:2013, EN 464:1994.
	Anti-slip work shoes	Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 20345:2012 y EN 13832-1:2007

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

For complete information see the product datasheet.

#### Appearance:

Physical state at 20 °C:	Solid
Appearance:	Crystalline
Colour:	White
Odour:	Odourless
Odour threshold:	Non-applicable *

#### Volatility:

Boiling point at atmospheric pressure:	Non-applicable *
Vapour pressure at 20 °C:	Non-applicable *
Vapour pressure at 50 °C:	Non-applicable *
Evaporation rate at 20 °C:	Non-applicable *

#### Product description:

Density at 20 °C:	1350 kg/m <sup>3</sup>
Relative density at 20 °C:	1.35
Dynamic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 40 °C:	Non-applicable *
Concentration:	Non-applicable *
pH:	4.8 (at 20 %)
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	310 °C
Melting point/freezing point:	188 °C

#### Flammability:

Flash Point:	Non-applicable
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

#### Explosive (Solid):

Lower explosive limit:	Non-applicable *
Upper explosive limit:	Non-applicable *

#### Particle characteristics:

Median equivalent diameter:	Non-applicable *
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### 9.2 Other information:

#### Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *

\*Not relevant due to the nature of the product, not providing information property of its hazards.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Aerosols-total percentage (by mass) of flammable components: Non-applicable \*

Other safety characteristics:

Surface tension at 20 °C: Non-applicable \*

Refraction index: Non-applicable \*

\*Not relevant due to the nature of the product, not providing information property of its hazards.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

### 10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

### 10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

### 10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Notapplicable	Notapplicable	Notapplicable	Notapplicable	Notapplicable

### 10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Notapplicable	Notapplicable	Notapplicable	Avoid alkalis or strong bases

### 10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects:

**Dangerous health implications:**

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):

- Acute toxicity : Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.  
IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

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## SECTION 11: TOXICOLOGICAL INFORMATION (continued)

### E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

### F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

### G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

### H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

### Other information:

Non-applicable

### Product-specific toxicological information:

Acute toxicity		Genus
LD50 oral	907 mg/kg	Rat

### Specific toxicology information on the substances:

Identification		Acute toxicity		Genus
guanidinium chloride CAS: 50-01-1	LD50 oral	907 mg/kg		Rat
	LD50 dermal	Non-applicable		
	LC50 inhalation	1.5 mg/L (ATEi)		

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity:

#### Product-specific aquatic toxicity:

Acute toxicity		Species	Genus
LC50	1850 mg/L (96 h)	Non-applicable	Fish
EC50	70 mg/L (48 h)	Non-applicable	Crustacean
EC50	33 mg/L (72 h)	Non-applicable	Algae

#### Substance-specific aquatic toxicity:

##### Acute toxicity:

Identification		Concentration	Species	Genus
guanidinium chloride CAS: 50-01-1	LC50	1850 mg/L (96 h)	Pimephales promelas	Fish
	EC50	70 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	33 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae

##### Chronic toxicity:

Identification		Concentration	Species	Genus
guanidinium chloride CAS: 50-01-1	NOEC	181 mg/L	Pimephales promelas	Fish
	NOEC	2.9 mg/L	Daphnia magna	Crustacean

### 12.2 Persistence and degradability:

#### Substance-specific information:

Identification		Degradability		Biodegradability	
guanidinium chloride CAS: 50-01-1	BOD5	Non-applicable	Concentration	20 mg/L	
	COD	Non-applicable	Period	22 days	
	BOD5/COD	Non-applicable	% Biodegradable	100 %	

### 12.3 Bioaccumulative potential:

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## SECTION 12: ECOLOGICAL INFORMATION (continued)

### Substance-specific information:

Identification		Bioaccumulation potential	
guanidinium chloride	BCF		1
CAS: 50-01-1	Pow Log		-1.63
	Potential		Low

#### 12.4 Mobility in soil:

Not available

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

Product fails to meet PBT/vPvB criteria

#### 12.6 Other adverse effects:

Not described

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods:

#### Type of waste:

HP6 Acute Toxicity, HP4 Irritant – skin irritation and eye damage

#### Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance The Waste Regulations 2011, 2011 No. 988. As under 15 01 of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. Waste should not be disposed of to drains. See paragraph 6.2.

#### Regulations related to waste management:

In accordance with Annex II of UK REACH the provisions related to waste management are stated:

UK legislation: The Waste Regulations 2011.

## SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport (ADR/RID,IMDG,IATA)

## SECTION 15: REGULATORY INFORMATION

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

- Substances listed in UK candidate list of substances of very high concern (SVHCs): Non-applicable
- Substances listed in UK REACH Authorisation List (Annex 14): Non-applicable

#### The Control of Major Accident Hazards Regulations 2015:

Non-applicable

#### Restrictions to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII UK REACH, etc.):

Non-applicable

#### Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

#### Other legislation:

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020.

Control of Substances Hazardous to Health Regulations 2002 (as amended)

EH40/2005 Workplace exposure limits.

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**SECTION 16: OTHER INFORMATION****Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with ANNEX II-The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

**Texts of the legislative phrases mentioned in section 2:**

H302+H332: Harmful if swallowed or if inhaled.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**GB CLP Regulation:**

Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Skin Irrit. 2: H315 - Causes skin irritation.

**Advice related to training:**

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

<http://echa.europa.eu>

<http://eur-lex.europa.eu>

**Abbreviations and acronyms:**

ADR: European agreement concerning the international carriage of dangerous goods by road

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

LC50: Lethal Concentration 50

EC50: Effective concentration 50

LogPOW: Octanolwater partition coefficient

Koc: Partition coefficient of organic carbon

UFI: unique formula identifier

IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at UK, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -