

Safety data sheet
according to 1907/2006/EC, Article 31

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Printing date 17.06.2021

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Version number 7.05 (replaces version 7.04)

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

· **1.1 Product identifier**

· **Trade name:** guanidinium chloride

· **Article number:** A1106

· **CAS Number:**

50-01-1

· **EC number:**

200-002-3

· **Index number:**

607-148-00-0

· **Registration number** 01-2119977063-35-XXXX

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

· **Life cycle stages**

F Formulation or re-packing

IS Use at industrial Sites

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU15 Manufacture of fabricated metal products, except machinery and equipment

SU20 Health services

· **Product category**

PC19 Intermediate

PC21 Laboratory chemicals

PC29 Pharmaceuticals

· **Process category**

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC13 Treatment of articles by dipping and pouring

PROC14 Tableting, compression, extrusion, pelletisation, granulation

PROC15 Use as laboratory reagent

· **Environmental release category**

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

· **Technical function**

No technical function

Intermediate (precursor)

Processing aid

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Trade name: guanidinium chloride

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· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt

Tel.: +49 (0)6151 93570
Fax.: +49 (0)6151 935711
msds@applichem.com

· **Further information obtainable from:** Dept. Compliance

· **1.4 Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves / eye protection / face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Substances**

· **CAS No. Description**

50-01-1 guanidinium chloride

· **Identification number(s)**

· **EC number:** 200-002-3

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Trade name: guanidinium chloride

· **Index number:** 607-148-00-0

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SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Involve doctor immediately.

· **After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

· **After skin contact:**

Call a doctor immediately.

Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Rinse out mouth.

make victim drink water (maximum of 2 drinking glasses)

Do not induce vomiting; call for medical help immediately.

· 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

· 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **For safety reasons unsuitable extinguishing agents:** Water spray

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

Carbon monoxide and carbon dioxide

Ammonia

Hydrogen chloride (HCl)

Phosgene gas

Non-combustible.

· 5.3 Advice for firefighters

· **Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Avoid formation of dust.

Avoid substance contact.

Ensure adequate ventilation

· 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

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Trade name: guanidinium chloride

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· **6.3 Methods and material for containment and cleaning up:**

- Pick up mechanically.
- Avoid formation of dust.
- Dispose contaminated material as waste according to item 13.
- Ensure adequate ventilation.
- Clean up affected area.

· **6.4 Reference to other sections**

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

- Thorough dedusting.
 - Ensure good ventilation/exhaustion at the workplace.
 - Prevent formation of dust.
 - Any unavoidable deposit of dust must be regularly removed.
- **Information about fire - and explosion protection:** The product is not flammable.

· **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:**
 - This product is hygroscopic.
 - Keep container tightly sealed.
 - Open receptacle only under localised extractor facilities.
 - Store receptacle in a well ventilated area.
 - Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** Room Temperature
- **Storage class:** 13
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:** Not required.

· **DNELs**

Oral	Long-term - systemic effects, general population	0.5 mg/kg
Dermal	Long-term - systemic effects, worker	1 mg/kg
	Long term - systemic effects, general population	0.5 mg/kg
Inhalative	Acute - systemic effects, worker	10.5 mg/m ³
	Long-term - systemic effects, worker	3.5 mg/m ³
	Long-term - systemic effects, general population	0.87 mg/m ³

- **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing
 - Wash hands before breaks and at the end of work.
 - Vacuum clean contaminated clothing. Do not blow or brush off contamination.
 - Avoid contact with the eyes and skin.

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· **Respiratory protection:**

Filter P3

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.4 mm

Value for the permeation: Level ≥ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.4 mm

Value for the permeation: Level ≥ 480 min

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:**

Use protective suit.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Solid

· **Colour:**

Colourless

· **Odour:**

Odourless

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

178-185 °C

· **Boiling point or initial boiling point and boiling range**

>231 °C

· **Flammability**

Product is not flammable.

· **Lower and upper explosion limit**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

Not applicable.

· **Auto-ignition temperature:**

Not determined.

· **Decomposition temperature:**

Not determined.

· **pH**

4.5-5.5 (5%)

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· Viscosity:	
· Kinematic viscosity	Not applicable.
· Dynamic:	Not applicable.
· Solubility	
· water at 20 °C:	2150 g/l
· Partition coefficient n-octanol/water (log value)	-1.70006
· Vapour pressure:	Not applicable.
· Density and/or relative density	
· Density at 20 °C:	1.344 g/cm ³
· Relative density	Not determined.
· Bulk density:	800 kg/m ³
· Vapour density	Not applicable.
· Particle characteristics	See item 3.

· 9.2 Other information	
· Appearance:	
· Form:	Solid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	>360 °C
· Explosive properties:	Product does not present an explosion hazard.
· Change in condition	
· Evaporation rate	Not applicable.

· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
strong acids
strong bases
strong oxidants

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Trade name: guanidinium chloride

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- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5
- **Additional information:** hygroscopic

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
Harmful if swallowed or if inhaled.
- **LD/LC50 values relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

Components	Type	Value	Species
Oral	LD50	773.6 mg/kg (rat)	
Inhalative	LC50/4 h	3,181 mg/l (rat)	

- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **After inhalation:** Irritant to skin and mucous membranes.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**

· Repeated dose toxicity			
Oral	NOAEL	100 mg/kg bw/day (rat)	

- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.

Type of test	Effective concentration	Method	Assessment
EC50/72 h	33.5 mg/l (Algae)		
LC50/48 h	1,759 mg/l (fish)		
NOEC/72 h	6.3 mg/l (Algae)		

- **12.2 Persistence and degradability** Not easily biodegradable
- **12.3 Bioaccumulative potential** ~ -1.7 log Pow
- **Bioconcentration factor (BCF)** 3.2 L/kg ww
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Do not allow product to reach ground water, water course or sewage system.

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Trade name: guanidinium chloride

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water (Contd. of page 7)

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

- | | |
|---|-----------------|
| · 14.1 UN number or ID number
· ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name
· ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es)
· ADR, ADN, IMDG, IATA
· Class | Void |
| · 14.4 Packing group
· ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Maritime transport in bulk according to IMO instruments | Not applicable. |
| · UN "Model Regulation": | Void |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57** Substance is not listed.

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Trade name: guanidinium chloride

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance
- **Date of previous version:** 11.03.2021
- **Version number of previous version:** 7.04

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

- *** Data compared to the previous version altered.**

EU