

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Guanidine hydrochloride

CAS-No.: 50-01-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302


Acute toxicity, Inhalation (Category 4), H332

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Warning
Hazard statement(s)	H302 + H332 Harmful if swallowed or if inhaled H315 Causes skin irritation. H319 Causes serious eye irritation.
Precautionary statement(s)	P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear eye protection/ face protection. P280 Wear protective gloves. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. 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. P362 Take off contaminated clothing and wash before reuse. P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Aminomethanamidinehydrochloride
Aminoformamidinehydrochloride
Guanidinium chloride

Formula: $\text{CH}_5\text{N}_3 \cdot \text{HCl}$
Molecular weight: 95.53 g/mol
CAS-No.: 50-01-1
EC-No.: 200-002-3

Hazardous components

Component	Classification	Concentration
Guanidinium chloride		
	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; H302 + H332, H315, H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.2 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic

Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Hazardous components without workplace control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
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Skin protection	<p>Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.</p> <p>Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)</p> <p>Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374</p> <p>If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.</p>
Body Protection	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure	Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: crystalline Colour: white
Odour	odourless
Odour Threshold	No data available
pH	4.5 - 6.0 at 571.8 g/l at 25 °C (77 °F)
Melting point/freezing point	Melting point/range: 185 - 189 °C (365 - 372 °F)
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	1.345 g/cm ³ at 20 °C (68 °F)
Water solubility	573.18 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	log Pow: -1.7 at ca.20 °C (68 °F)
Auto-ignition temperature	No data available
Decomposition temperature	> 310 °C (> 590 °F) -
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Hydrogen fluoride

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas, Sodium oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity LD50 Oral - Rat - 475 mg/kg Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Excitement. Diarrhoea LD50 Oral - Mouse - 571 mg/kg Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Muscle contraction or spasticity. Behavioral:Irritability. LD50 Oral - Rat - 1,120 mg/kg LC50 Inhalation - Rat - female - 4 h - 3.181 mg/l (OECD Test Guideline 403) Dermal: No data available Dermal: No data available No data available No data available
Skin corrosion/irritation No data available Skin - Rabbit Result: Skin irritation
Serious eye damage/eye irritation No data available Eyes - Rabbit Result: Irritating to eyes.
Respiratory or skin sensitisation No data available Buehler Test - Guinea pig Did not cause sensitisation on laboratory animals.
Germ cell mutagenicity No data available Not mutagenic in Ames Test
Carcinogenicity
Reproductive toxicity No data available No data available No data available No data available
Specific target organ toxicity -single exposure No data available
Specific target organ toxicity -repeated exposure No data available
Aspiration hazard No data available
Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Kieselguhr)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

Toxicity to fish LC50 - *Leuciscus idus* (Golden orfe) - 1,759 mg/l

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Component	CAS-No.	Revision Date
Guanidinium chloride	50-01-1	
Sodium hydrogencarbonate	144-55-8	

New Jersey Right To Know Components

Component	CAS-No.	Revision Date
Guanidinium chloride	50-01-1	
Sodium hydrogencarbonate	144-55-8	
1-Ethenyl-2-pyrrolidinone homopolymer	9003-39-8	

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Eye Irrit. Eye irritation

H302 Harmful if swallowed.

H302 + H332 Harmful if swallowed or if inhaled

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

Skin Irrit. Skin irritation

HMIS Rating

Health hazard: 2

Chronic Health Hazard: *

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 2

Fire Hazard: 0

Reactivity Hazard: 0
