Revised on: 26.04.2019 Guanidine hydrochloride for molecular biology
Created on: 26.04.2019

## 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

**Trade name:** Guanidine hydrochloride for molecular biology

**Article number:** 1324

**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

**Sector of use:**

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

**Process category:**

PROC4 Chemical production where opportunity for exposure arises

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)

PROC15 Use as laboratory reagent

**Environmental release category:**

ERC1 Manufacture of the substance

**Application of the substance / the mixture:**

- Laboratory chemical

1.3. Details of the supplier of the safety data sheet

**Manufacturer/Supplier**:
neoFroxx GmbH
Marie-Curie-Str. 3
D-64683 Einhausen
info@neofroxx.com

**Further information obtainable from**:
Dep. Quality Control

1.4. Emergency telephone number

+49 (6251) 989 24 - 0 (during normal business hours)

## 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

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**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/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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 contactlenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

**Results of PBT and vPvB assessment:**

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3. Composition / information on ingredients

3.1. Chemical characterisation: Substances

**CAS No. Description:**

50-01-1 Guanidine hydrochloride

**Identification number(s):**

EC number: 200-002-3

Index number: 607-148-00-0

## 4. First aid measures

4.1. Description of first aid measures

**After inhalation:** Supply fresh air or oxygen; call for doctor.

**After skin contact:** Immediately remove any clothing soiled by the product.

Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, 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.

## 5. Firefighting measures

5.1. Extinguishing media

**Suitable extinguishing agents:**

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2. Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)
Carbon oxides (CO, CO2).
Ammonia

5.3. Advice for firefighters
**Protective equipment:**
Wear self-contained respiratory protective device.
**Additional information:**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

## 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid formation of dust.
Do not inhale dust.
Avoid substance contact.
Ensure adequate ventilation

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

6.3. Methods and material for containment and cleaning up
Pick up mechanically.
Avoid generation of dusts.
Dispose contaminated material as waste according to item 13.
Clean up affected area.
Dispose of the material collected according to regulations.

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.

## 7. Handling and storage

7.1. Precautions for safe handling
Prevent formation of dust.
Any unavoidable deposit of dust must be regularly removed.
**Information about fire - and explosion protection:** No special measures required.

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:** Not required.·
**Further information about storage conditions:**
Keep container tightly sealed.
Open receptacle only under localised extractor facilities.
Store under lock and key and with access restricted to technical experts or their assistants only.
**Recommended storage temperature:** +15 - +25°C
**Storage class:** 13

7.3. Specific end use(s)
No further relevant information available.

## 8. Exposure controls / personal protection

**Additional information about design of technical facilities:** No further data; see item 7.

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
Inhalative Acute - systemic effects, worker 10.3 mg/m3
Long-term - systemic effects, worker 3.5 mg/m3
Long-term - systemic effects, general population 0.87 mg/m3
**Additional information:** The lists valid during the making were used as basis.

8.2. Exposure controls
**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.
**Respiratory protection:**
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.
Filter P2·
**Protection of hands:**

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: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min
**As protection from splashes gloves made of the following materials are suitable:**
Recommended thickness of the material: ≥ 0.11 mm

Value for the permeation: Level ≥ 480 min

**Eye protection:**

**Body protection:**

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

## 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

**General Information:**

**Appearance:**

Form: Solid

Colour: Colourless

Odour: Odourless

pH-value: 4.5-5.5

**Change in condition:**

Melting point/freezing point: 178-185 °C

Initial boiling point and boiling range: Undetermined.

Flash point: Not applicable.

Flammability (solid, gas): Product is not flammable.

Explosive properties: Product does not present an explosion hazard.

**Explosion limits:**

Lower: Not determined.

Upper: Not determined.

Vapour pressure: Not applicable.

Density at 20 °C: 1.344 g/cm³

Bulk density: 800 kg/m³

Solubility in / Miscibility with water at 20 °C: 2150 g/l

Partition coefficient: n-octanol/water: Not determined.

**Viscosity:**

Dynamic: Not applicable.

Kinematic: Not applicable.

9.2. Other information

No further relevant information available.

## 10. Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

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
No dangerous reactions known.

10.6. Hazardous decomposition products:
No dangerous decomposition products known.

## 11. Toxicological information

11.1. Information on toxicological effects

**Acute toxicity:**

Harmful if swallowed or if inhaled.

**LD/LC50 values relevant for classification:**

| Components | Type | Value | Species |
|---|---|---|---|
| Oral | LD50 | 907 mg/kg | (rat) |
| Inhalative | LC50/4 h | 5.3 mg/l | (rat) |

**Primary irritant effect:**

**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 sensitization:**

Based on available data, the classification criteria are not met.

**CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**

**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.

## 12. Ecological information

12.1. Toxicity

**Aquatic toxicity:**

| Type of test | Effective concentration | Method | Assessment |
|---|---|---|---|
| LC50/48 h | 1,759 mg/l (fish) | | |

12.2. Persistence and degradability
No further relevant information available.

12.3. Bioaccumulative potential
No further relevant information available.

12.4. Mobility in soil
No further relevant information available.

**Additional ecological information:**

**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Water hazard class 1 (German Regulation) (Assessment by list):**

slightly hazardous for water.

Do not allow to enter waters, waste water, or soil.

12.5. Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

12.6. Other adverse effects
No further relevant information available.

## 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.

## 14. Transport information

14.1. UN-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
Marine pollutant: No

14.6. Special precautions for user
Not applicable.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.
**UN "Model Regulation":** Void

## 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.

15.2. Chemical safety assessment:
A Chemical Safety Assessment has been carried out.

## 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.
**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 européen sur le transport 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
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

## Annex: Exposure scenario

**Short title of the exposure scenario:** Use in laboratories
**Sector of Use:** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
**Process category:**
PROC4 Chemical production where opportunity for exposure arises
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)
PROC15 Use as laboratory reagent
**Environmental release category** ERC1 Manufacture of the substance
**Description of the activities / processes covered in the Exposure Scenario:**

See section 1 of the annex to the Safety Data Sheet.

**Conditions of use:**

**Duration and frequency:** 5 workdays/week.

**Physical parameters:**

**Physical state:** Solid

**Concentration of the substance in the mixture:** Raw material.

**Other operational conditions:**

**Other operational conditions affecting environmental exposure:** No special measures required.

**Other operational conditions affecting worker exposure:**

Avoid contact with eyes.

Avoid contact with the skin.

**Other operational conditions affecting consumer exposure:**

Keep out of the reach of children.

**Other operational conditions affecting consumer exposure during the use of the product:**

Not applicable.

**Risk management measures:**

**Worker protection:**

**Organisational protective measures:** No special measures required.

**Technical protective measures:**

Ensure that suitable extractors are available on processing machines

**Personal protective measures:**

Do not inhale dust / smoke / mist.

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles

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

**Measures for consumer protection:**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

**Environmental protection measures:**

**Water:** No special measures required.

**Disposal measures:** Ensure that waste is collected and contained.

**Disposal procedures:**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**Waste type:** Partially emptied and uncleaned packaging

**Exposure estimation:**

**Worker (dermal):**

The calculated value is smaller than the DNEL.

The exposure estimation was carried out in accordance with ECETOC TRA.

**Worker (inhalation):**

The calculated value is smaller than the DNEL.

The exposure estimation was carried out in accordance with ECETOC TRA.

**Consumer:**

Not relevant for this Exposure Scenario.

**Guidance for downstream users:** No further relevant information available.

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