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Material Safety Data Sheet

SECTION 1:CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Guanidine hydrochloride
Company: Suzhou YACOO Science Co., Ltd.
Address: No.128,FangZhou Road,Suzhou Industrial Park,China
Tel: 0512-87182055
Fax: 0512-87182056

SECTION 2: Hazards identification

Summary of emergency
crystalline white odorless Harmful if swallowed or if inhaled., Causes skin irritation., Causes serious eye irritation., Harmful to aquatic life. Show this material safety data sheet to the doctor in attendance. After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. After eye contact: rinse out with plenty of water., Call in ophthalmologist., Remove contact lenses. After swallowing: immediately make victim drink water (two glasses at most)., Consult a physician. Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Violent reactions possible with: Strong oxidizing agents

2.1GHS Classification

Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Skin corrosion/irritation (Category 2), H315
Serious eye damage/eye irritation (Category 2A), H319
Short-term (acute) aquatic hazard (Category 3), H402
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2GHS Label elements, including precautionary statements

Pictogram

Signal Word Warning

Hazard statement(s)

H302 + H332Harmful if swallowed or if inhaled.

H315Causes skin irritation.

H319Causes serious eye irritation.

H402Harmful to aquatic life. Precautionary statement(s)

Prevention

- P261 Avoid breathing dust.
- 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.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ eye protection/ face protection.

Response

- 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 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.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.
- Reduced Labeling (<= 125 ml)

Pictogram

Signal Word Warning Hazard statement(s)

- H302 + H332 Harmful if swallowed or if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H402 Harmful to aquatic life.

Precautionary statement(s)

none

2.3 Physical and chemical hazards

Referring to current information, no physical or chemical hazard.

2.4 Health hazards

- H302 Harmful if swallowed.
- H332 Harmful if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.

2.5 Environmental hazards

- H402 Harmful to aquatic life.

2.6 Other hazards - none

SECTION 3: Composition/information on ingredients

Substance / Mixture: Substance

3.1 Substances

Synonyms: Aminomethanamidinehydrochloride Aminofomamidinehydrochloride Guanidinium chloride

Formula: CH₅N₃ • HCl

Molecular weight: 95.53 g/mol

CAS-No.: 50-01-1

EC-No.: 200-002-3

Index-No.: 607-148-00-0

Hazardous ingredients

Component	Classification	Concentration
Guanidinium chloride	Acute toxicity Category 4; Skin corrosion/irritation Category 2; Serious eye damage/eye irritation Category 2A; Short-term (acute) aquatic hazard Category 3; H302, H332, H315, H319, H402	<= 100 %

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

SECTION 4: First aid measures

4.1 Description of first-aid measures General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration.

Oxygen if necessary. Immediately call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

4.3 Indication of any immediate medical attention and special treatment needed

No data available

4.4 Notes to physician

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO_x) Hydrogen chloride gas Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities Storage conditions

Tightly closed. Dry. hygroscopic

Storage class

Storage class (TRGS 510): 11: Combustible Solids

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Physical state crystalline

b) Color white

c) Odor odorless

d) Melting point/freezing point Melting point/range: 180 - 185 ° C - lit.

e) Initial boiling point and boiling range Not applicable

f) Flammability (solid, gas) No data available

g) Upper/lower flammability or explosive limits No data available

h) Flash point Not applicable

i) Autoignition temperature No data available

j) Decomposition temperature > 310 ° C -

k) pH 4.5 - 6 at 573 g/l at 25 ° C

l) Viscosity

Viscosity, kinematic: No data available

Viscosity, dynamic: Not applicable

m) Water solubility 2,150 g/l at 20 ° C - completely soluble

n) Partition coefficient: n-octanol/water

log Pow: < -1.7 at 20 ° C - Bioaccumulation is not expected.

o)Vapor pressure No data available

p)Density 1.345 g/cm³ at 20 ° C

Relative density No data available

q)Relative vapor density No data available

r)Particle characteristics No data available

s)Explosive properties No data available

t)Oxidizing properties none

9.2Other safety information

No data available

SECTION 10: Stability and reactivity

10.1Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.2Possibility of hazardous reactions Violent reactions possible with: Strong oxidizing agents

10.3Conditions to avoid

no information available

10.4Incompatible materials

Strong oxidizing agents

10.5Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1Information on toxicological effects Acute toxicity

LD50 Oral - Rat - female - 773.6 mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - female - 4 h - 3.181 mg/l - dust/mist

(OECD Test Guideline 403)

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation - 24 h (US-EPA)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation. (OECD Test Guideline 405)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization

Buehler Test - Guinea pig Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity Not mutagenic in Ames Test. Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster fibroblasts Metabolic activation: without metabolic activation Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

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

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 100 mg/kg

RTECS: MF4300000

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

After absorption:

The following applies to parasympathomimetic agents in general: after oral uptake and depending on the dose, these physiologically highly active substances cause salivation, rhinorrhoea, and in some cases also lacrimation, perspiration, contraction of the pupils, dizziness, vomiting, colics, diarrhoea. Risk of collapse and cardiac arrest. Inhalation of dusts and aerosols leads to the above symptoms. Respiration is accelerated at first, then slows down.

Handle in accordance with good industrial hygiene and safety practice. Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 70.2 mg/l - 48 h (OECD Test Guideline 202)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Guanidinium nitrate

Toxicity to algaestatic test ErC50 - Pseudokirchneriella subcapitata (green algae) - 33.5 mg/l - 72 h

(Regulation (EC) No. 440/2008, Annex, C.3) Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Guanidinium nitrate

Toxicity to bacteriostatic test EC10 - Pseudomonas putida - ca. 7,125 mg/l - 18 h (DIN 38412)

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 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

14.1 UN number

ADR/RID: -IMDG: -IATA-DGR: -

14.2 UN proper shipping name ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -IMDG: -IATA-DGR: -

14.4 Packaging group

ADR/RID: -IMDG: -IATA-DGR: -

14.5 Environmental hazards

ADR/RID: noIMDG Marine pollutant: noIATA-DGR: no

14.6 Special precautions for user

14.7 Incompatible materials

Strong oxidizing agents

Further information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

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

National regulatory information

Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

SECTION 16:OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.