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Safety Data Sheet (SDS)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product Name: Guanidine Hydrochloride
Product Code: GH01, GH05
CAS Number: 50-01-1
EC Number: 200-002-3
Molecular Formula: CH₅N₃HCl

1.2 Details of the supplier of the safety data sheet

Company: EcoTech Biotechnology
Address: Universite Mah. Cat Yolu Cad. Ata Teknokent Sitesi B Blok No: 74/113 Yakutiye Erzurum Turkiye
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Emergency
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1.3 Product use

For research use only. Not intended for diagnostic or therapeutic use.

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
3.1O	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.1I	Acute toxicity (inhal.)	4	Acute Tox. 4	H332
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word: Warning

Pictograms

GHS07



Hazard statements

H302+H332 Harmful if swallowed or if inhaled

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dust

P280 Wear protective gloves/eye protection

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of 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

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Product Name

Guanidine Hydrochloride

Concentration: -

Formula: $\text{CH}_5\text{N}_3\text{HCl}$

Molecular Weight: 95.5

3.2 Substances

Substance, Specific Conc. Limits, M-factors, ATE			
Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	556,5 mg/kg 3,181 mg/4h	oral inhalation: dust/mist

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

Most important symptoms and effects, both acute and delayed

Irritation, Vomiting, Diarrhoea, Gastrointestinal complaints, Vertigo, Dyspnoea, Circulatory collapse, Cardiac arrhythmias

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

co-ordinate firefighting measures to the fire surroundings!
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable Extinguishing

water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.4 Protective equipment and precautions for firefighters

Advice for firefighters

Standard procedure for chemical fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Always wear recommended Personal Protective Equipment. Use personal protection equipment. Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and materials for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid dust formation.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Hygroscopic solid.

Incompatible substances or mixtures

Observe hints for combined storage. Incompatible materials: see section 10.

Protect against external exposure, such as

Humidity

Consideration of other advice:

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	3,5 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	10,5 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands, forearms and face after handling.

Personal protective equipment

Eye/face protection: Tight sealing safety goggles.

Hand protection: Wear suitable gloves Glove material: Compatible chemical-resistant gloves.

Skin and body protection: Wear laboratory coat or impervious clothing. Choose appropriate body protection according to the amount and concentration of the substance at the work place.

Respiratory protection: In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

a) Appearance:	White crystalline solid
b) Odor:	Odorless
c) Odor Threshold:	No data available
d) pH:	4,5 – 5,5 (in aqueous solution: 100 g/l, 25 °C)
e) Melting point/freezing point:	188°C
f) Initial boiling point and boiling range:	Not determined
g) Flash point:	Not applicable
h) Evaporation rate:	No data available
i) Flammability (solid, gas):	this material is combustible, but will not ignite readily
j) Upper / lower flammability or explosive limits:	Not relevant
k) Vapor pressure:	Not determined
l) Vapor density:	Not relevant
m) Relative density:	No data available
n) Solubility(ies):	2150 g/L (25°C) water
o) Partition coefficient: <i>n</i> -octanol / water:	<-1,7 (pH value: 7,4, 20 °C) (ECHA)
p) Auto-ignition temperature:	No data available
q) Decomposition temperature:	>231 °C at 1.013 hPa (ECHA)
r) Viscosity:	Not relevant
s) Explosive properties:	Not relevant
t) Oxidizing properties:	None

SECTION 10. STABILITY AND REACTIVITY

Stability and reactivity

Reactivity: The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Chemical stability: Hygroscopic solid.

Possibility of hazardous reactions: Violent reaction with: strong oxidiser.

Conditions to avoid: Keep away from heat. Decomposition takes place from temperatures above: >231 °C at 1.013 hPa. Protect from moisture.

Incompatible materials: No dangerous reaction known under conditions of normal use.

Hazardous decomposition products: Hazardous combustion products: see section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

a) Acute toxicity: Harmful if swallowed. Harmful if inhaled.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	556,5 mg/kg	rat		ECHA
inhalation: dust/mist	LC50	3,181 mg/l/4h	rat		ECHA

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
dermal	LD50	>2.000 mg/kg	rabbit		ECHA

b) Skin corrosion / irritation: Causes skin irritation.
c) Serious eye damage/eye irritation: Causes serious eye irritation.
d) Carcinogenicity: Shall not be classified as carcinogenic.
e) Reproductive toxicity: Shall not be classified as a reproductive toxicant.
f) STOT - SE: Shall not be classified as a specific target organ toxicant (single exposure).
g) STOT - RE: Shall not be classified as a specific target organ toxicant (repeated exposure).
h) Aspiration hazard: Shall not be classified as presenting an aspiration hazard.

11.2 Potential health effects

Ingestion: diarrhoea, vomiting, gastrointestinal complaints.
Inhalation: Inhalation of dust may cause irritation of the respiratory system, cough, Dyspnoea.
Skin: causes skin irritation.
Eyes: Causes serious eye irritation.

11.3 Additional Information

Other adverse effects: Vertigo, Dyspnoea, Circulatory collapse, Cardiac arrhythmias

SECTION 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)				
Endpoint	Value	Species	Source	Exposure time
EC50	70,2 mg/l	aquatic invertebrates	ECHA	48 h
ErC50	33,5 mg/l	algae	ECHA	72 h

Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
NOEC	≥181 mg/l	fish	ECHA	35 d
NOEC	2,9 mg/l	aquatic invertebrates	ECHA	21 d

12.2 Persistence and degradability

Theoretical Oxygen Demand (without nitrification): 0 mg/mg
Theoretical Oxygen Demand (with nitrification): 0,8932 mg/mg
Theoretical Carbon Dioxide: 0,4607 mg/mg

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

Section 14. TRANSPORT INFORMATION

14.1 DOT (US)

Not regulated in the meaning of transport regulations.

14.2 IMDG

Not regulated in the meaning of transport regulations

14.3 IATA

Not regulated in the meaning of transport regulations

UN number	Not Applicable
UN proper shipping name	Not Applicable
Transport hazard class(es)	Not Applicable
Packing group	Not Applicable

SECTION 15. REGULATORY INFORMATION

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

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
Guanidine hydrochloride	substances in tattoo inks and permanent make-up		R75	75

Legend

R75	1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances: (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight; (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight; (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight; (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than: (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
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- (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
- (a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - (b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
- (a) the statement "Mixture for use in tattoos or permanent make-up";
 - (b) a reference number to uniquely identify the batch;
 - (c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
 - (d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
 - (e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
 - (f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;

15.2 Environmental hazards

Not Applicable

15.3 Chemical safety assessment

According to REACH, Article 14 (1) a chemical safety assessment has been carried out for this substance or components of this mixture when the substance has been registered in quantities of 10 tonnes or more per year per registrant.

SECTION 16. OTHER INFORMATION

Key to abbreviations and acronyms

STOT-SE: Specific Target Organ Toxicity - Single Exposure

STOT-RE: Specific Target Organ Toxicity - Repeated Exposure

PBT: Persistent Bioaccumulative and Toxic

vPvB: very Persistent very Bioaccumulative and toxic

ADR: European Agreement concerning the international carriage of Dangerous goods by Road

CAS: Chemical Abstracts Service

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

IMDG: International Maritime code for Dangerous Goods

REACH: Registration, Evaluation, Authorization and restriction of Chemicals

RID: Regulations concerning the International transport of Dangerous goods by rail

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