Safety data sheet

Guanidine Hydrochloride

Product name Guanidine Hydrochloride	Catalog no. GH01, GH05
Synonyms Guanidinium chloride	Revision date -
CAS no. 50-01-1	Format version / date 1.0 / 24 October 2026

01 PRODUCT AND COMPANY IDENTIFICATION

Product identifier	Guanidine Hydrochloride
Product code	GH01, GH05
CAS number	50-01-1
EC number	200-002-3
Recommended use	For research use only. Not intended for diagnostic or therapeutic use.
Supplier	EcoTech Biotechnology
Website	www.ecotechbiotech.com
Address	Universite Mah. İpekyolu Cad. Ata Teknokent Sitesi B Blok No: Z10 Yakutiye Erzurum Türkiye
Telephone	0090 544 327 34 97
SDS contact	info@ecotechbiotech.com
Emergency telephone	0090 544 327 34 97
Available	Monday-Saturday/08:00-20:00/GMT+3
Languages	Turkish/English
Outside these hours	Contact: info@ecotechbiotech.com

02 HAZARDS IDENTIFICATION

Classification	Acute Tox. 4 (oral), H302; Acute Tox. 4 (inhalation), H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319 (CLP).
Label elements	GHS labeling under Regulation (EC) No. 1272/2008 (CLP).
Symbols / pictograms	
Signal word	Warning
Hazard statements	H302+H332 – Harmful if swallowed or if inhaled. H315 – Causes skin irritation. H319 – Causes serious eye irritation.
Precautionary statements – Prevention	P260 – Do not breathe dust. P280 – Wear protective gloves and 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. Remove contact lenses if easy to do; continue rinsing.
Other hazards	Not assessed to be PBT or vPvB; no endocrine disruptors at ≥0.1%.

Composition & response

Guanidine Hydrochloride | SAFETY DATA SHEET / SECTIONS 03-05

03 COMPOSITION / INFORMATION ON INGREDIENTS

Product name	Guanidine Hydrochloride
Synonyms	Guanidinium chloride
Concentration	-
Formula	CH5N3 · HCl
Molecular weight	95.5 g/mol
Composition	Guanidinium chloride (CAS 50-01-1; EC 200-002-3).

04 FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	Rinse eyes with clean running water for at least 10 minutes, holding eyelids apart. Seek medical advice if irritation occurs.
Skin contact	Remove contaminated clothing and wash skin with plenty of water. Seek medical advice if irritation persists.
Inhalation	Move to fresh air. Obtain medical advice if unwell.
Ingestion	Rinse mouth (only if conscious). Call a physician; do not give anything by mouth to an unconscious person.
Self-protection of first aider	Use protective gloves, eye protection and protective clothing.
Most important symptoms / effects	Irritation, vomiting, diarrhea, dizziness, dyspnea and gastrointestinal complaints; severe exposure may cause cardiovascular symptoms.
Immediate medical attention / treatment	Treat symptomatically.

05 FIREFIGHTING MEASURES

Suitable extinguishing media	Water spray, foam (including alcohol-resistant foam) or dry chemical powder.
Unsuitable extinguishing media	Do not use a direct water jet.
Special hazards arising from the substance or mixture	Thermal decomposition may release nitrogen oxides (NOx), carbon monoxide (CO) and carbon dioxide (CO2).
Explosion data	Fine dust dispersed in air may create a dust-explosion hazard; avoid dust accumulation.
Advice for firefighters	Wear protective clothing and self-contained breathing apparatus.

Safe use & protection

Guanidine Hydrochloride | SAFETY DATA SHEET / SECTIONS 06-08

06 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Avoid creating or inhaling dust; avoid skin and eye contact. Wear appropriate PPE and provide ventilation.
Environmental precautions	Prevent entry into drains, soil and surface waters; retain contaminated wash water.
Methods and materials for containment and cleaning up	Collect mechanically without generating dust and place in suitable labeled closed containers.
Reference to other sections	See sections 8 and 13.

07 HANDLING AND STORAGE

Precautions for safe handling	Avoid dust formation and contact with eyes and skin. Wash hands after use; do not eat or drink during handling.
Conditions for safe storage	Store dry at 15–25°C. Protect from moisture; material is hygroscopic.
Container labeling	Keep containers tightly closed and clearly labeled.

08 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits: No data available. Worker DNELs: 3.5 mg/m³ (chronic inhalation), 10.5 mg/m³ (acute inhalation), and 1 mg/kg bw/day (chronic dermal).

8.2 Exposure controls

Engineering measures	Provide adequate ventilation, especially in confined spaces.
Hygiene measures	Do not eat, drink or smoke while using the product. Wash hands after handling.
Eye / face protection	Wear tight-fitting protective goggles.
Hand protection	Wear compatible chemical-resistant gloves.
Skin and body protection	Wear a laboratory coat and appropriate protective clothing.
Respiratory protection	Use a particulate respirator when dust exposure is possible and adequate ventilation is unavailable.

Material properties

Guanidine Hydrochloride | SAFETY DATA SHEET / SECTIONS 09-10

09 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White crystalline solid
Odor	Odorless
Odor threshold	No data available
pH	4.5–5.5 (100 g/L in water, 25°C)
Melting point / freezing point	188°C
Initial boiling point and boiling range	Not determined
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	Combustible; does not ignite readily.
Upper / lower flammability or explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility(ies)	2,150 g/L in water (25°C)
Partition coefficient: n-octanol / water	< −1.7 (pH 7.4, 20°C)
Auto-ignition temperature	No data available
Decomposition temperature	> 231°C (at 1,013 hPa)
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	None

10 STABILITY AND REACTIVITY

Reactivity	Fine airborne dust may present an explosion hazard.
Chemical stability	Hygroscopic solid; stable under recommended dry storage conditions.
Possibility of hazardous reactions	May react vigorously with strong oxidizers.
Conditions to avoid	Heat above decomposition temperature and moisture.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	See section 5; CO, CO2 and NOx on thermal decomposition.

Health & environment

Guanidine Hydrochloride | SAFETY DATA SHEET / SECTIONS 11-13

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	LD50 oral (rat) 556.5 mg/kg; LC50 inhalation, dust/mist (rat) 3.181 mg/L/4 h; LD50 dermal (rabbit) >2,000 mg/kg.
Skin corrosion / irritation	Causes skin irritation (H315).
Serious eye damage / eye irritation	Causes serious eye irritation (H319).
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
STOT - SE	Not classified.
STOT - RE	Not classified.
Aspiration hazard	Not classified.

11.2 Potential health effects

Ingestion: Gastrointestinal irritation, diarrhea or vomiting.
Inhalation: Dust may cause respiratory irritation, coughing and difficulty breathing.
Skin: Causes irritation.
Eyes: Causes serious irritation.

11.3 Additional information

No additional information is available

12 ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic invertebrates: EC50 70.2 mg/L (48 h). Algae: ErC50 33.5 mg/L (72 h). Not classified as hazardous to the aquatic environment.
Persistence and degradability	Theoretical oxygen demand (with nitrification): 0.8932 mg/mg.
Bioaccumulative potential	No significant accumulation in organisms expected.
Mobility in soil	No data available
Results of PBT and vPvB assessment	Not assessed to be PBT or vPvB.

13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose of material as hazardous waste, in accordance with applicable regulations.
Contaminated packaging	Handle contaminated packaging as the substance; clean, empty packaging may be recycled.

Transport & reference

Guanidine Hydrochloride | SAFETY DATA SHEET / SECTIONS 14-16

14 TRANSPORT INFORMATION

Mode	UN no.	UN proper shipping name	Hazard class	Packing group	Environmental hazard
DOT (US)	-	Not regulated for transport.	-	-	No transport environmental hazard indicated.
IMDG	-	Not regulated for transport.	-	-	No transport environmental hazard indicated.
IATA	-	Not regulated for transport.	-	-	No transport environmental hazard indicated.

Special precautions for user	No data available
Transport in bulk (MARPOL / IBC)	Not applicable

15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation	REACH Annex XVII, Entry 75: restrictions applying to tattoo inks and permanent makeup formulations.
Environmental hazards	Not classified as an environmental hazard.
Chemical Safety Assessment	Chemical safety assessment subject to applicable REACH tonnage and registration obligations.

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