Safety data sheet

ChemiPURE Guanidine Thiocyanate, ≥99%

Product name ChemiPURE Guanidine Thiocyanate, ≥99%	Catalog no. GT01, GT05
Synonyms Guanidinium thiocyanate; Guanidinium isothiocyanate	SDS revision -
CAS no. 593-84-0	Format version / date 3 / 25 October 2026

01 PRODUCT AND COMPANY IDENTIFICATION

Product identifier	ChemiPURE Guanidine Thiocyanate, ≥99%
Product code	GT01; GT05
CAS number	593-84-0
EC number	209-812-1
Recommended use	For research use only. Chaotropic agent for cell lysis, protein denaturation and purification of nucleic acids.
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, dermal, inhalation); Skin Corr. 1C; Eye Dam. 1; Aquatic Chronic 3, under Regulation (EC) No. 1272/2008 (CLP).
Label elements	GHS05 and GHS07; signal word: Danger.
Symbols / pictograms	
Signal word	Danger
Hazard statements	H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled. H314 - Causes severe skin burns and eye damage. H318 - Causes serious eye damage. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements - Prevention	P260 - Do not breathe dust. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing and eye/face protection.
Precautionary statements - Response	P301+P330+P331 - IF SWALLOWED: Rinse mouth; do not induce vomiting. P303+P361+P353 - IF ON SKIN: Remove contaminated clothing; rinse skin. P305+P351+P338 - IF IN EYES: Rinse cautiously with water, remove lenses if possible. Seek urgent medical care.
Other hazards	EUH032 - Contact with acids liberates very toxic gas. Do not mix with acids or bleach (sodium hypochlorite). Dust may damage the respiratory tract.

Composition & response

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03 COMPOSITION / INFORMATION ON INGREDIENTS

Product name	ChemiPURE Guanidine Thiocyanate, ≥99%
Synonyms	Guanidinium thiocyanate; Guanidinium isothiocyanate; Thiocyanic acid, compound with guanidine (1:1).
Concentration	Guanidine thiocyanate, ≥99% (purity).
Formula	CH5N3·HSCN (C2H6N4S)
Molecular weight	118.16 g/mol
Mixture statement	Substance: guanidine thiocyanate (CAS 593-84-0; EC 209-812-1), purity ≥99%. Specific impurities and their amounts are not available.

04 FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	Immediately flush eyes with running water for at least 15 minutes, holding eyelids apart. Remove contact lenses if easy to do. Seek urgent medical attention.
Skin contact	Immediately remove contaminated clothing. Rinse skin with plenty of running water for at least 15 minutes. Seek urgent medical advice for chemical burns.
Inhalation	Move to fresh air without exposing rescuers. Keep comfortable for breathing. Seek immediate medical attention if exposure or symptoms occur.
Ingestion	Rinse mouth. Do not induce vomiting. Never give anything orally to an unconscious person. Obtain immediate medical advice.
Self-protection of first aider	Wear suitable gloves, goggles and protective clothing. Avoid exposure to dust and contaminated clothing.
Most important symptoms / effects	Severe skin burns and eye damage; respiratory tract irritation or corrosive effects. Harmful by swallowing, skin contact and inhalation.
Notes to physicians	Treat symptomatically; consider corrosive exposure and monitor respiratory effects.

05 FIREFIGHTING MEASURES

Suitable extinguishing media	Water spray, alcohol-resistant foam, dry chemical powder or carbon dioxide, according to the surrounding fire.
Unsuitable extinguishing media	No special restriction established; do not apply high-pressure jets that disperse powder.
Special hazards arising from the substance or mixture	Thermal decomposition or fire may generate toxic and irritating sulfur/nitrogen-containing fumes, including sulfur oxides and nitrogen oxides.
Explosion data	Not classified as an explosive; avoid creating airborne dust clouds.
Advice for firefighters	Use self-contained breathing apparatus and full chemical protective clothing. Prevent contaminated run-off from entering drains.

Safe use & protection

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06 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Restrict access to trained personnel. Avoid dust generation, inhalation and contact with skin or eyes. Wear chemical-resistant gloves, goggles/face protection and protective clothing.
Environmental precautions	Keep out of drains, surface water and soil. Avoid release to the environment.
Methods and materials for containment and cleaning up	Collect carefully using dust-minimizing methods. Transfer into dry, tightly sealed, labelled containers. Never clean spills with bleach or acidic solutions.
Reference to other sections	See Sections 8 and 13 for personal protection and hazardous-waste disposal.

07 HANDLING AND STORAGE

Precautions for safe handling	Work in a well-ventilated area or local exhaust hood. Avoid dust and direct contact. Never mix with acids, oxidizing agents or chlorine-based bleach. Wash hands thoroughly after use.
Conditions for safe storage	Store at room temperature in a dry, cool, ventilated area in a tightly closed container. Protect from humidity and incompatible chemicals, especially acids and bleach.
Container labeling	Keep the original container tightly closed and clearly labelled; use secondary containment where appropriate.

08 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

No substance-specific occupational exposure limit has been established. Minimize dust exposure using engineering controls and a laboratory risk assessment.

8.2 Exposure controls

Engineering measures	Use local exhaust or a suitable chemical fume hood when handling the powder. Provide eyewash and emergency safety shower.
Hygiene measures	Do not eat, drink or smoke in the work area. Remove contaminated clothing and wash hands after handling.
Eye / face protection	Wear chemical splash goggles (EN 166) and a face shield where exposure is possible.
Hand protection	Use tested chemical-resistant gloves (EN 374); inspect before use and replace after contamination.
Skin and body protection	Wear long-sleeved laboratory coat, protective clothing and closed footwear. Avoid exposed skin.
Respiratory protection	Avoid dust with engineering controls. If risk remains, wear a suitable fitted particulate respirator selected by occupational risk assessment.

Material properties

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09 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White to off-white crystalline powder (solid)
Odor	Odorless
Odor threshold	No data available
pH	Approximately 4.8-6.0 (20% aqueous solution)
Melting point / freezing point	Approximately 118-122 °C
Initial boiling point and boiling range	No reliable data available; may decompose on heating
Flash point	Not applicable to solid
Evaporation rate	Not applicable to solid
Flammability (solid, gas)	Not classified as a readily flammable solid
Upper / lower flammability or explosive limits	Not applicable / no data available
Vapor pressure	Very low at ambient temperature
Vapor density	Not applicable (solid)
Relative density	Approximately 1.29 g/cm3 at 20 °C
Solubility(ies)	Highly soluble in water (approximately 1,420 g/L at 20 °C)
Partition coefficient: n-octanol / water	log Pow approximately -1.5 (reported value)
Auto-ignition temperature	No data available
Decomposition temperature	No verified product-specific value available
Viscosity	Not applicable (solid)
Explosive properties	Not classified as explosive
Oxidizing properties	Not classified as oxidizing

10 STABILITY AND REACTIVITY

Reactivity	Contact with acids can release very toxic gas. Avoid mixing with acids, bleach and strong oxidizing agents.
Chemical stability	Stable in sealed, dry containers at room temperature under recommended storage conditions.
Possibility of hazardous reactions	Dangerous reaction with acids; incompatible with chlorine-based oxidizers such as sodium hypochlorite.
Conditions to avoid	Humidity, excessive heating, dust formation and contact with incompatible reagents.
Incompatible materials	Acids, strong oxidizing agents and sodium hypochlorite solutions.
Hazardous decomposition products	Potentially toxic sulfur-, nitrogen- and cyanide-containing gases upon inappropriate chemical reaction or strong heating.

Health & environment

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11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Acute Tox. 4 (oral, dermal and inhalation): harmful if swallowed, on skin contact or if inhaled.
Skin corrosion / irritation	Skin Corr. 1C (H314): severe skin burns possible.
Serious eye damage / eye irritation	Eye Dam. 1 (H318): serious eye damage possible.
Carcinogenicity	Not classified as carcinogenic on the available component information.
Reproductive toxicity	No conclusive data available for classification.
STOT - SE	May irritate/corrode respiratory tissues; no separate STOT classification established.
STOT - RE	No data available for a specific classification.
Aspiration hazard	Not classified; solid powder.

11.2 Potential health effects

Ingestion: Harmful; may cause burns of the mouth and gastrointestinal tract.
Inhalation: Harmful; dust may irritate or damage airways.
Skin: Harmful; causes severe burns.
Eyes: Can cause serious eye damage.

11.3 Additional information

Avoid breathing dust. Do not mix with acids; very toxic gas can be formed.

12 ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic Chronic 3 (H412): harmful to aquatic life with long lasting effects.
Persistence and degradability	No adequate product-specific information available.
Bioaccumulative potential	No reliable product-specific data available.
Mobility in soil	High water solubility indicates potential mobility in soil and water.
Results of PBT and vPvB assessment	Not identified as PBT/vPvB in reviewed substance information.

13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose of as hazardous laboratory chemical waste through an authorized service. Keep separate from acids and bleach; do not discharge to drains.
Contaminated packaging	Keep contaminated packaging sealed and labelled; dispose of according to local hazardous-waste requirements.

Transport & reference

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14 TRANSPORT INFORMATION

Mode	UN no.	UN proper shipping name	Hazard class	Packing group	Environmental hazards
ADR/RID	UN 1759	CORROSIVE SOLID, N.O.S. (Guanidine thiocyanate)	8	III	No
IMDG	UN 1759	CORROSIVE SOLID, N.O.S. (Guanidine thiocyanate)	8	III	No
IATA	UN 1759	CORROSIVE SOLID, N.O.S. (Guanidine thiocyanate)	8	III	No

15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation	Regulation (EC) No. 1907/2006 (REACH) and Regulation (EC) No. 1272/2008 (CLP). Substance classification: Acute Tox. 4; Skin Corr. 1C; Eye Dam. 1; Aquatic Chronic 3. EUH032.
Environmental hazards	Harmful to aquatic life with long lasting effects (H412).
Chemical safety assessment	No product-specific chemical safety assessment available.

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