

SAFETY DATA SHEET

Guanidine carbonate

Version 4.0

Revision Date 10/03/2023

Former date 07/31/2020

SECTION 1. IDENTIFICATION

Product name : Guanidine carbonate (GC)

Manufacturer or supplier's details

Manufacturer : LAT Nitrogen Linz GmbH
St.-Peter Strasse 25, A-4021 Linz, Austria
Telephone: +43 732 6914-0

E-mail address : sds@lat-nitrogen.com

Emergency telephone number : +1 215 207 0061 (regional number, NCEC Carechem 24)

Recommended use of the chemical and restrictions on use

Recommended use : Use as an intermediate
Surface treatment
Flame retardants
Cosmetic additive

Restrictions on use : Use only according to our recommendations.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**

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P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection/ face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER/
doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with
water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing. Immediately call a POISON
CENTER/ doctor.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Substance name : diguanidinium carbonate
CAS-No. : 209-813-7

Components

Chemical name	CAS-No.	Concentration (% w/w)
carbonic acid; guanidine	593-85-1	> 99

SECTION 4. FIRST AID MEASURES

General advice : Call a physician immediately.
Symptoms of poisoning may not appear for several hours.
Keep under medical supervision for at least 48 hours.

If inhaled : Move to fresh air.
Consult a physician if necessary.

In case of skin contact : Wash off immediately with soap and plenty of water while
removing all contaminated clothes and shoes.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,
for at least 15 minutes.
Consult a physician.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Call a physician immediately.

Most important symptoms and effects, both acute and : Health injuries may be delayed.
Causes serious eye damage.

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delayed Harmful if swallowed.
Causes serious eye damage.

Notes to physician : Treat symptomatically.
There is no specific antidote available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO₂)
Water spray jet
Alcohol-resistant foam

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Vapours may form explosive mixtures with air.
Hazardous decomposition products formed under fire conditions.
See chapter 10.

Further information : Standard procedure for chemical fires.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Keep people away from and upwind of spill/leak.
Avoid inhalation, ingestion and contact with skin and eyes.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation, especially in confined areas.

Environmental precautions : Should not be released into the environment.
Prevent product from entering drains.

Methods and materials for containment and cleaning up : Large spills should be collected mechanically (remove by pumping) for disposal.
Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : No special protective measures against fire required.

Advice on safe handling : Keep container tightly closed.
Avoid dust formation.

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- In case of dust development use dust mask.
- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
- Materials to avoid : No special restrictions on storage with other products.
- Further information on storage stability : Stable for at least 2 years without chemical changes in compliance with storage conditions.
But there is hardening of product and reducing of pourability if it is stored more than 2 months.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : In case of dust development use dust mask.
- Hand protection
- Material : Nitrile rubber
 - Break through time : ≥ 480 min
 - Glove thickness : ≥ 0.11 mm
- Remarks : Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Eye protection : Safety glasses
- Skin and body protection : Wear suitable protective clothing.
Safety shoes
- Protective measures : Handle in accordance with good industrial hygiene and safety practice.
Smoking, eating and drinking should be prohibited in the application area.
Do not breathe dust.
- Hygiene measures : Keep away from food, drink and animal feedingstuffs.
Take off immediately all contaminated clothing.
Wash hands and face before breaks and immediately after handling the product.
Shower or bathe at the end of working.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

LAT Nitrogen Austria GmbH | St. Peter-Strasse 25 | 4021 Linz | Austria
Telephone +43 732 6915 0
FN 257746p | Regional Court of Linz | Website www.lat-nitrogen.com

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Appearance	:	Crystalline powder
Colour	:	yellowish-white
Odour	:	odourless
pH	:	11.7 (68 °F / 20 °C) Concentration: 110 g/l
Melting point	:	ca. 448 °F / 231 °C
Boiling point	:	Decomposes below the boiling point.
Flash point	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable.
Upper explosion limit / Upper flammability limit	:	Not applicable (solid)
Lower explosion limit / Lower flammability limit	:	Not applicable (solid)
Vapour pressure	:	Not applicable (solid)
Relative vapour density	:	Not applicable (solid)
Density	:	1.29 g/cm ³
Solubility(ies) Water solubility	:	450 g/l (68 °F / 20 °C)
Partition coefficient: n-octanol/water	:	log Pow: -1.43 (68 °F / 20 °C)
Auto-ignition temperature	:	Not applicable (solid)
Decomposition temperature	:	ca. 448 °F / 231 °C
Viscosity Viscosity, kinematic	:	Not applicable (solid)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	180.17 g/mol

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Minimum ignition energy : > 10 kJ
not dust explosive

Particle size : < 300 µm
> 90 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if used as directed.

Chemical stability : Stable for at least 2 years without chemical changes in compliance with storage conditions.
But there is hardening of product and reducing of pourability if it is stored more than 2 months.

Possibility of hazardous reactions : Exothermic reaction with strong acids.

Conditions to avoid : Temperature > 150 °C
In heat violent hydrolysis reaction with water.

Incompatible materials : Acids

Hazardous decomposition products : Under fire conditions:
Ammonia
Nitrogen oxides (NO_x)
Carbon monoxide
Carbon dioxide (CO₂)

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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : LD50 (Rat): 1,045 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

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Acute toxicity (other routes of administration) :
Remarks: No data available

Skin corrosion/irritation

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

Product:

Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Irreversible effects on the eye
Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation

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

Respiratory sensitisation

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

Product:

Test Type : Buehler Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

Germ cell mutagenicity

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

Product:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Species: Mouse
Application Route: Oral
Dose: 400 - 1200 mg/kg body weight
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

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

IARC No component of this product present at levels greater than or equal to 0.1% is

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identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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.

Repeated dose toxicity

Product:

Species : Rat
NOAEL : 300 mg/kg
Application Route : Oral
Exposure time : 28 d
Method : OECD Test Guideline 407
Remarks : Repeated dose (28 days) toxicity (oral)

Application Route : Dermal
Remarks : This information is not available.

Application Route : Inhalation
Remarks : This information is not available.

Aspiration toxicity

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,000 mg/l
Exposure time: 96 h
Remarks: estimated

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 41 mg/l
Exposure time: 48 h
Test Type: static test
Method: Tested according to Directive 92/69/EEC.

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- Toxicity to algae/aquatic plants : EbC50 (Selenastrum capricornutum (fresh water algae)): 15.1 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: Tested according to Directive 92/69/EEC.
- ErC50 (Selenastrum capricornutum (green algae)): 65 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Method: Tested according to Directive 92/69/EEC.
- Toxicity to fish (Chronic toxicity) : NOEC (fathead minnow (Pimephales promelas)): 133.6 mg/l
Exposure time: 35 d
Test Type: flow-through test
Test substance: Guanidinium nitrate (CAS 506-93-4)
Remarks: Read-across (Analogy)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 2.14 mg/l
Exposure time: 21 d
Test Type: flow-through test
Test substance: Guanidinium nitrate (CAS 506-93-4)
Method: OECD Test Guideline 211
Remarks: Read-across (Analogy)
- Toxicity to microorganisms : EC50: 116 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition of activated sludge
Method: OECD Test Guideline 209

Persistence and degradability

Product:

- Biodegradability : Inoculum: activated sludge
Result: Not biodegradable
Biodegradation: 0.1 %
Exposure time: 28 d
Method: OECD Test Guideline 301 E
- Inoculum: Water
Biodegradation: 50 %
Exposure time: 33 d
Method: Simulation study
Test substance: Guanidinium nitrate (CAS 506-93-4)
Remarks: Read-across (Analogy)
- Inoculum: Soil
Biodegradation: 50 %
Exposure time: 11.8 d
Kinetic:

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10 d: 40 %
14 d: 80 %
Method: Simulation study

Remarks: Inherently biodegradable.

Bioaccumulative potential**Product:**

Bioaccumulation : Bioconcentration factor (BCF): 0.1
Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Mobility in soil**Product:**

Distribution among environmental compartments : Medium: Soil
Koc: 20
Remarks: Mobile in soils
Not expected to adsorb on soil.

Medium: Air
Remarks: negligible

Other adverse effects**Product:**

Additional ecological information : Do not allow product to reach ground water, water bodies or sewage system.
Spillage of even small amounts can lead to pollution of drinking water.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : This substance, when discarded or disposed of is not specifically listed as a hazardous waste in Federal regulations. However, it could be hazardous if it is considered toxic, corrosive, ignitable or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous waste if it is mixed with or comes in contact with a

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hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste.
The transportation, storage, treatment and disposal of this waste material must be conducted in accordance with all applicable Federal, state and local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data is available on the product itself.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

SECTION 15. REGULATORY INFORMATION

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

All ingredients within this product meet TSCA regulations.

In accordance with Hazard Communication Standard 2012 (29 CFR 1910.1200), the product does not need to be classified nor labelled.

California Prop. 65

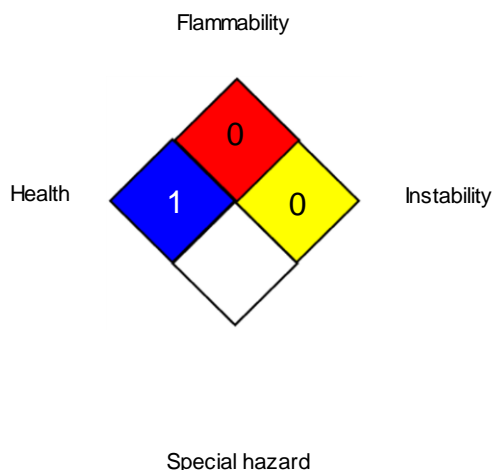
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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SECTION 16. OTHER INFORMATION**Further information****NFPA 704:****HMIS® IV:**

HEALTH	/	1
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECl - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety

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and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Issued according to the GHS Regulation.

Sources of key data used to compile the Safety Data Sheet : Chemical Safety Report, Guanidine carbonate, 2016

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Disclaimer

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