

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Guanidine Carbonate, pure
Registration number : 01-2119968552-29-XXXX
CAS-No. : 593-85-1
EC-No. : 209-813-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-
stance/Mixture : Organic intermediate/s

1.3 Details of the supplier of the safety data sheet

Company : AlzChem Trostberg GmbH
Dr.-Albert-Frank-Str. 32
83308 Trostberg, Germany
Telephone : +49 8621 86-3351
E-mail address of person
responsible for the SDS : alz-pst@alzchem.com

1.4 Emergency telephone number

Emergency telephone num-
ber : +49 8621 86-2776
AlzChem Trostberg GmbH, Fire Brigade

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4 : H302: Harmful if swallowed.
Serious eye damage, Category 1 : H318: Causes serious eye damage.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

- Precautionary statements : **Prevention:**
P280 Wear protective gloves/ protective clothing/ eye protection.
- Response:**
P301 IF SWALLOWED:
P330 Rinse mouth.
P312 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.
P310 Immediately call a POISON CENTER/ doctor.

2.3 Other hazards

Not a PBT, vPvB substance as per the criteria of the REACH Ordinance

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : Diguanidinium carbonate

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
diguanidinium carbonate	593-85-1 209-813-7	> 98

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Seek medical advice in case of symptoms caused by eye or skin contact, inhalation or swallowing.
Symptoms may occur with delay.
- If inhaled : Bring affected person outside and ensure that he/she is comfortable.
- In case of skin contact : Remove contaminated or saturated clothing.
Wash off with plenty of water.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
Remove contact lenses if this can be easily done.
Immediate further treatment in ophthalmic hospital/ ophthalmologist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treatment:
No specific antidote known.
Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray, foam, CO₂, dry powder.

Unsuitable extinguishing media : high volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products : Ammonia
Nitrogen oxides (NO_x)
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment; see section 8.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Product or extinguishing water with product must not be allowed to enter soil, sewers or natural bodies of water.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Use mechanical handling equipment.
Avoid dust formation.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

|| For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Handle in accordance with good industrial hygiene and safety

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

practice.
Provide appropriate exhaust ventilation at machinery.
Do not allow individual / bulk containers to stand open
Avoid dust formation.

Advice on protection against fire and explosion : not dustexplosionable, Hartmann-apparatus No special precautions required.

Hygiene measures : Do not breathe dust. Contact with skin, eyes and clothes must be strictly avoided Take off clothing and shoes contaminated with product. Clean before reuse. Do not eat, drink or smoke while working. Wash hands, and/or face before breaks and when workday is finished. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed in a dry, cool and well-ventilated place. Protect from moisture.

Advice on common storage : Do not store near acids.

Further information on storage stability : Hygroscopic.

7.3 Specific end use(s)

Specific use(s) : We are unaware of any specific end uses which go beyond the data reported in Section 1.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Diguanidiunium carbonate	Worker	Inhalation	Acute systemic effects	9,93 mg/m ³
	Worker	Inhalation	Long-term systemic effects	3,31 mg/m ³
	Worker	Dermal	Long-term systemic effects	1,88 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Diguanidiunium carbonate	Freshwater	0,214 mg/l
	Fresh water sediment	1,2 mg/kg
	Marine water	0,0214 mg/l
	sewage treatment plant	1,16 mg/l
	Soil	0,114 mg/l

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

8.2 Exposure controls

Personal protective equipment

- Eye protection : Safety glasses
- Hand protection
- Material : Nitrile rubber, Recommendation: Dermatril 740
 - Break through time : 480 min
 - Glove thickness : 0,11 mm
 - Directive : DIN EN 374
 - Manufacturer : Kächele-Cama Latex GmbH (KCL), Germany
- Material : Nitrile rubber, Recommendation: Camatril 730
- Break through time : 480 min
 - Glove thickness : 0,4 mm
 - Directive : DIN EN 374
 - Manufacturer : Kächele-Cama Latex GmbH (KCL), Germany
- Skin and body protection : Protective clothing
- Respiratory protection : Use suitable respiratory protection in the presence of dust.
Recommendation:
Dust protection mask in accordance with EN 149 FFP2

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : powder
- Colour : white
- Odour : Odourless to slightly ammoniac
- pH : 11,3 (25 °C)
Concentration: 200 g/l
- Melting point/range : 197 °C
Decomposition: yes
- Flash point : Not applicable
- Flammability (solid, gas) : not flammable
- Density : 1,252 g/cm³ (20 °C)
- Bulk density : 600 kg/m³
- Solubility(ies)
- Water solubility : 500 g/l (30 °C)
- Partition coefficient: n-octanol/water : log Pow: -1,43
- Auto-ignition temperature : > 360 °C

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

Method: Flammability of deposited dust
No burning at 360°C.

> 600 °C
Method: Ignition temperature for swirling (airborne) dust

Decomposition temperature : ca. 230 °C

Viscosity
Viscosity, dynamic : Not applicable

Explosive properties : not explosive

9.2 Other information

Impact sensitivity : not sensitive to impact
: Not sensitive to rubbing

Molecular weight : 180,17 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Exothermic reaction with strong acids.

10.4 Conditions to avoid

Conditions to avoid : temperatures > 150 °C

Avoid moisture.

10.5 Incompatible materials

Materials to avoid : Acids

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.
see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

Acute oral toxicity : Assessment: Harmful if swallowed.

Components:

diguanidinium carbonate:

Acute oral toxicity : LD50 (Rat): 1054 mg/kg
Method: OECD Test Guideline 401
Remarks: IUCLID

Acute dermal toxicity : LD50 (rat): > 2000 mg/kg
Method: OECD Test Guideline 402
Remarks: IUCLID

Skin corrosion/irritation

Components:

diguanidinium carbonate:

Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : IUCLID

Serious eye damage/eye irritation

Product:

Result : Causes serious eye damage.

Components:

diguanidinium carbonate:

Assessment : Causes serious eye damage.
Method : OECD Test Guideline 405
Result : irreversible damages
Remarks : IUCLID

Respiratory or skin sensitisation

Components:

diguanidinium carbonate:

Test Type : Buehler Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : not sensitizing to the skin
Remarks : IUCLID

Germ cell mutagenicity

Components:

diguanidinium carbonate:

Genotoxicity in vitro : Test Type: Ames-test (Cytogenetic test)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

Method: OECD TG 471
Result: negative
Remarks: IUCLID

Genotoxicity in vivo : Species: Mouse
Application Route: Oral
Method: OECD TG 474
Result: negative
Remarks: IUCLID

Carcinogenicity

Components:

diguanidinium carbonate:

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

diguanidinium carbonate:

Reproductive toxicity - Assessment : No data available

STOT - repeated exposure

Components:

diguanidinium carbonate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks : literature

Repeated dose toxicity

Components:

diguanidinium carbonate:

Species : Rat
NOAEL : 300 mg/kg
Application Route : Oral
Exposure time : 28-day
Method : OECD Test Guideline 407
Remarks : IUCLID

Further information

Product:

Remarks : No additional toxicological data are available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

Components:

diguanidinium carbonate:

Remarks : No additional toxicological data are available.

SECTION 12: Ecological information

12.1 Toxicity

Components:

diguanidinium carbonate:

- Toxicity to fish : LC50 (Danio rerio): > 100 mg/l
Exposure time: 96 h
Remarks: IUCLID
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 41 mg/l
Exposure time: 48 h
Method: Directive 92/69/EEC C.2
Remarks: IUCLID
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 65 mg/l
End point: growth rate
Exposure time: 72 h
Method: EC 92/69
Remarks: IUCLID
- Toxicity to microorganisms : EC50 (Activated sludge): 116 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD TG 209
Remarks: IUCLID
- Toxicity to fish (Chronic toxicity) : NOEC: 133,6 mg/l
Exposure time: 35 d
Species: Pimephales promelas (fathead minnow)
Test substance: This information is derived from evaluation of or a test result for a similar compound (conclusion based on analogy).
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 2,14 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Test substance: This information is derived from evaluation of or a test result for a similar compound (conclusion based on analogy).
Method: OECD 211

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

12.2 Persistence and degradability

Components:

diguanidinium carbonate:

Biodegradability : Inoculum: Activated sludge
Result: Not readily biodegradable.
Biodegradation: 0,1 %
Exposure time: 28 d
Method: OECD TG 301 E
Remarks: IUCLID

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Significant bioaccumulation need not be expected.

Components:

diguanidinium carbonate:

Bioaccumulation : Bioconcentration factor (BCF): 0,1

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Not a PBT, vPvB substance as per the criteria of the REACH Ordinance.

12.6 Other adverse effects

Product:

Additional ecological information : Prevent penetration into soil, stretches of water and drainage systems.
No further ecotoxicological data are available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Must be brought to an adequate waste treatment facility, in conformity with applicable waste disposal regulations.

Contaminated packaging : Packaging, that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Remarks : Not classified as dangerous in the meaning of transport regulations.

ADR
Remarks : Not regulated as a dangerous good
: Not classified as dangerous in the meaning of transport regulations.

RID
Remarks : Not regulated as a dangerous good
: Not classified as dangerous in the meaning of transport regulations.

IMDG
Remarks : Not regulated as a dangerous good
: Not classified as dangerous in the meaning of transport regulations.

IATA (Cargo)
Remarks : Not regulated as a dangerous good
: Not classified as dangerous in the meaning of transport regulations.

IATA_P (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

15.2 Chemical safety assessment

A substance safety assessment was carried out for this product.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; KECI - 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

REG_EU / EN

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Annex: Exposure Scenarios

Table of Contents

Number	Title
ES 1	Worker (industrial) - Formulation and Re-Packing
ES 2	Worker (industrial) - Use as an Intermediate
ES 3	Worker (industrial) - Use as Coating

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

ES 1: Worker (industrial) - Formulation and Re-Packing

1.1. Title section

Structured Short Title	: Worker (industrial) - Formulation and Re-Packing
-------------------------------	--

Environment		
CS 1	Worker (industrial) - Formulation	ERC2
Worker		
CS 2	Worker (industrial) - Formulation and Re-Packing	PROC2
CS 3	Worker (industrial) - Formulation and Re-Packing	PROC3
CS 4	Worker (industrial) - Formulation and Re-Packing	PROC5
CS 5	Worker (industrial) - Formulation and Re-Packing	PROC8a
CS 6	Worker (industrial) - Formulation and Re-Packing	PROC8b
CS 7	Worker (industrial) - Formulation and Re-Packing	PROC9
CS 8	Worker (industrial) - Formulation and Re-Packing	PROC15

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Formulation of preparations (ERC2)

Amount used (or contained in articles), frequency and duration of use/exposure	
Annual amount per site	: 200 tons/year
Daily amount per site	: 2 tons/day
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: See Section 13 of the Safety Data Sheet.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18000 m ³ /d

1.2.2. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Closed systems
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

1.2.3. Control of worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Closed systems
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

1.2.4. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics

Covers concentrations up to 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : duration of activity <= 8 h

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Local exhaust ventilation

Dermal - minimum efficiency of 90 %

Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

1.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Local exhaust ventilation Dermal - minimum efficiency of 90 % Inhalation - minimum efficiency of 90 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

1.2.6. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Local exhaust ventilation Dermal - minimum efficiency of 95 % Inhalation - minimum efficiency of 95 %

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

1.2.7. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics

Covers concentrations up to 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : duration of activity <= 8 h

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Local exhaust ventilation

Dermal - minimum efficiency of 90 %

Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

1.2.8. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics	
Covers concentrations up to 100 %	
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: duration of activity <= 8 h
Technical and organisational conditions and measures	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Local exhaust ventilation Dermal - minimum efficiency of 90 % Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
For further specification, refer to section 8 of the SDS.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor
Temperature	: Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Basic Occupational Health and Safety Management System	

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation of preparations (ERC2)

Protection Target	Exposure estimate	RCR
Freshwater	0,15 mg/L (EUSES)	0,702
Marine water	0,015 mg/L (EUSES)	0,702
Sewage treatment plant	0 mg/L (EUSES)	< 0,01
Agricultural soil	0,015 mg/kg dry weight (EUSES)	0,135
Man via environment - Inhalation	0,004 mg/m ³ (EUSES)	< 0,01
Man via environment - Oral	0,002 mg/kg bw/day (EUSES)	< 0,01
Freshwater sediment	0,841 mg/kg dry weight (EUSES)	0,701

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

1.3.2. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,302
dermal	systemic	long-term	0,274 mg/kg bw/day (ECETOC TRA worker v3)	0,146
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,448
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
inhalative	systemic	short-term	4 mg/m ³ (ECETOC TRA worker v3)	0,403

1.3.3. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,302
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,376
dermal	systemic	long-term	0,138 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	4 mg/m ³ (ECETOC TRA worker v3)	0,403

1.3.4. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1,75 mg/m ³ (ECETOC TRA worker v3)	0,529
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,705

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,602
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	7 mg/m ³ (ECETOC TRA worker v3)	0,705

1.3.5. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,35 mg/m ³ (ECETOC TRA worker v3)	0,106
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,141
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,179
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	1,4 mg/m ³ (ECETOC TRA worker v3)	0,141

1.3.6. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,875 mg/m ³ (ECETOC TRA worker v3)	0,264
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,353
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,337
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	3,5 mg/m ³ (ECETOC TRA worker v3)	0,353

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

1.3.7. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1,4 mg/m ³ (ECETOC TRA worker v3)	0,423
inhalative	systemic	short-term	5,6 mg/m ³ (ECETOC TRA worker v3)	0,564
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,496
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,564

1.3.8. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,151
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,201
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,187
dermal	systemic	long-term	0,068 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	2 mg/m ³ (ECETOC TRA worker v3)	0,201

1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

In addition to the displayed PROC all PROC could be regarded as safe uses that could be deduced from "PROC Inclusion Hierarchy" (CEFIC, 2011-07-13)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU
Revision Date: 08.04.2020

Specification: 202372
Material no.:

Date of first issue: 06.03.2020
Print Date: 09.04.2020

ES 2: Worker (industrial) - Use as an Intermediate

2.1. Title section

Structured Short Title	: Worker (industrial) - Use as an Intermediate
-------------------------------	--

Environment		
CS 1	Worker (industrial) - Use as an Intermediate	ERC6a
Worker		
CS 2	Worker (industrial) - Use as an Intermediate	PROC2
CS 3	Worker (industrial) - Use as an Intermediate	PROC3
CS 4	Worker (industrial) - Use as an Intermediate	PROC4
CS 5	Worker (industrial) - Use as an Intermediate	PROC5
CS 6	Worker (industrial) - Use as an Intermediate	PROC15

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a)

Amount used (or contained in articles), frequency and duration of use/exposure	
Annual amount per site	: 200 tonnes/year
Daily amount per site	: 10 tons/day
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant
STP effluent	: 2000 m ³ /d
STP type	: Municipal sewage treatment plant
efficiency of sewage treatment plant	: 0,25 %
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: See Section 13 of the Safety Data Sheet.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18000 m ³ /d

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

2.2.2. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Use in contained systems
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

2.2.3. Control of worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Closed systems

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

2.2.4. Control of worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)

Product (article) characteristics

Covers concentrations up to 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : duration of activity \leq 8 h

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Local exhaust ventilation

Dermal - minimum efficiency of 90 %

Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

2.2.5. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Local exhaust ventilation Dermal - minimum efficiency of 90 % Inhalation - minimum efficiency of 90 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

2.2.6. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation Dermal - minimum efficiency of 90 % Inhalation - minimum efficiency of 90 %

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a)

Protection Target	Exposure estimate	RCR
Freshwater	0,1 mg/L (EUSES)	0,467
Freshwater sediment	0,56 mg/kg dry weight (EUSES)	0,466
Marine water	0,01 mg/L (EUSES)	0,467
Sewage treatment plant	0,998 mg/L (EUSES)	0,86
Agricultural soil	0,037 mg/kg dry weight (EUSES)	0,322
Man via environment - Inhalation	0,008 mg/m ³ (EUSES)	< 0,01
Man via environment - Oral	0,003 mg/kg dry weight (EUSES)	< 0,01

2.3.2. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,2 mg/m ³ (ECETOC TRA worker v3)	0,06
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,206

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

dermal	systemic	long-term	0,274 mg/kg bw/day (ECETOC TRA worker v3)	0,146
inhalative	systemic	short-term	4 mg/m ³ (ECETOC TRA worker v3)	0,403

2.3.3. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,302
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,376
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
dermal	systemic	long-term	0,138 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	4 mg/m ³ (ECETOC TRA worker v3)	0,403

2.3.4. Worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1,75 mg/m ³ (ECETOC TRA worker v3)	0,529
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,705
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,565
dermal	systemic	long-term	0,069 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	7 mg/m ³ (ECETOC TRA worker v3)	0,705

2.3.5. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
----------------	---------------	--------------------	-------------------	-----

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

		tor	mate	
inhalative	systemic	long-term	1,75 mg/m ³ (ECETOC TRA worker v3)	0,529
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,705
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,602
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	7 mg/m ³ (ECETOC TRA worker v3)	0,705

2.3.6. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,151
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,201
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,187
dermal	systemic	long-term	0,068 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	2 mg/m ³ (ECETOC TRA worker v3)	0,201

2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

In addition to the displayed PROC all PROC could be regarded as safe uses that could be deduced from "PROC Inclusion Hierarchy" (CEFIC, 2011-07-13)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Revision Date: 08.04.2020

Specification: 202372

Material no.:

Date of first issue: 06.03.2020

Print Date: 09.04.2020

ES 3: Worker (industrial) - Use as Coating

3.1. Title section

Structured Short Title	: Worker (industrial) - Use as Coating
-------------------------------	--

Environment		
CS 1	Worker (industrial) - Use as Coating	ERC4
Worker		
CS 2	Worker (industrial) - Use as Coating	PROC2
CS 3	Worker (industrial) - Use as Coating	PROC3
CS 4	Worker (industrial) - Use as Coating	PROC8a
CS 5	Worker (industrial) - Use as Coating	PROC8b
CS 6	Worker (industrial) - Use as Coating	PROC9
CS 7	Worker (industrial) - Use as Coating	PROC10
CS 8	Worker (industrial) - Use as Coating	PROC13
CS 9	Worker (industrial) - Use as Coating	PROC15

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure	
Annual amount per site	: 200 tons/year
Daily amount per site	: 10 tons/day
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: See Section 13 of the Safety Data Sheet.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18000 m ³ /d

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

3.2.2. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Closed systems
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

3.2.3. Control of worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Closed systems
Conditions and measures related to personal protection, hygiene and health evaluation

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

3.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics

Covers concentrations up to 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : duration of activity <= 8 h

Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Wear respiratory protection when its use is identified for certain contributing scenarios.
Inhalation - minimum efficiency of 90 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

3.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation Inhalation - minimum efficiency of 95 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

3.2.6. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation Inhalation - minimum efficiency of 90 %

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

3.2.7. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : duration of activity \leq 8 h

Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

3.2.8. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation Inhalation - minimum efficiency of 90 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor
Temperature : Covers use at ambient temperatures.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Basic Occupational Health and Safety Management System

3.2.9. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : duration of activity <= 8 h
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation Inhalation - minimum efficiency of 90 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor

Temperature : Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Basic Occupational Health and Safety Management System

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Protection Target	Exposure estimate	RCR
Freshwater	0,15 mg/L (EUSES)	0,702
Marine water	0,015 mg/L (EUSES)	0,702
Sewage treatment plant	0 mg/L (EUSES)	< 0,01
Agricultural soil	0,001 mg/kg dry weight (EUSES)	< 0,01
Man via environment - Inhalation	< 0,001 mg/m ³ (EUSES)	< 0,01
Man via environment - Oral	< 0,001 mg/kg bw/day (EUSES)	< 0,01
Freshwater sediment	0,841 mg/kg dry weight (EUSES)	0,701

3.3.2. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,2 mg/m ³ (ECETOC TRA worker v3)	0,06
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,206
dermal	systemic	long-term	0,274 mg/kg bw/day (ECETOC TRA worker v3)	0,146
inhalative	systemic	short-term	4 mg/m ³ (ECETOC	0,403

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

			TRA worker v3)	
--	--	--	----------------	--

3.3.3. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,302
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,403
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,376
dermal	systemic	long-term	0,138 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	4 mg/m ³ (ECETOC TRA worker v3)	0,403

3.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,151
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,201
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,224
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,073
inhalative	systemic	short-term	2 mg/m ³ (ECETOC TRA worker v3)	0,201

3.3.5. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1,25 mg/m ³ (ECETOC TRA worker v3)	0,378

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,504
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,414
dermal	systemic	long-term	0,069 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	5 mg/m ³ (ECETOC TRA worker v3)	0,504

3.3.6. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	1,4 mg/m ³ (ECETOC TRA worker v3)	0,423
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,564
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,46
dermal	systemic	long-term	0,069 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	5,6 mg/m ³ (ECETOC TRA worker v3)	0,564

3.3.7. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,6 mg/m ³ (ECETOC TRA worker v3)	0,181
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,242
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,619
dermal	systemic	long-term	0,823 mg/kg bw/day (ECETOC TRA worker v3)	0,438
inhalative	systemic	short-term	2,4 mg/m ³	0,242

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

			(ECETOC TRA worker v3)	
--	--	--	------------------------	--

3.3.8. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,151
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,201
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,516
dermal	systemic	long-term	0,686 mg/kg bw/day (ECETOC TRA worker v3)	0,365
inhalative	systemic	short-term	2 mg/m ³ (ECETOC TRA worker v3)	0,201

3.3.9. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,151
combined routes	systemic	short-term	(ECETOC TRA worker v3)	0,201
combined routes	systemic	long-term	(ECETOC TRA worker v3)	0,187
dermal	systemic	long-term	0,068 mg/kg bw/day (ECETOC TRA worker v3)	0,036
inhalative	systemic	short-term	2 mg/m ³ (ECETOC TRA worker v3)	0,201

3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

In addition to the displayed PROC all PROC could be regarded as safe uses that could be deduced from "PROC Inclusion Hierarchy" (CEFIC, 2011-07-13)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Guanidine Carbonate, pure

Version 2.0 / REG_EU

Specification: 202372

Date of first issue: 06.03.2020

Revision Date: 08.04.2020

Material no.:

Print Date: 09.04.2020

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.