

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740961.500  
Printing Date: 04.04.2023

Buffer RA1 (500 mL)  
Date of Issue: 18.07.2022

Page: 1/9  
Version: 2.2.2.2

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

### 1.1 Product Identifier / Product Name

REF 740961.500  
Product Name Buffer RA1 (500 mL)

1 x 500 mL RA1

UFI: 1A6V-H3H9-G20E-ACTR

### 1.2 Relevant identified Uses of the Substance or Mixture and Uses advised against

#### Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0  
The exposure scenario is integrated into sections 1-16.

#### Uses advised against

not described

### 1.3 Details of the Supplier and of the Safety Data Sheet

#### Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG  
Valenciennner Str. 11, 52355 Düren, Germany  
Phone: +49 2421 969 0

E-mail: sds@mn-net.com (msds@mn-net.com)

### 1.4 Emergency Telephone Number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

USA: American Association Of Poison Control Centers

Rockville, MD 20857. tel. 1-800-222-1222, <<https://www.poisonhelp.org>>

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730

<<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

<<http://www.mn-net.com/SDS>>

## SECTION 2: Hazard(s) Identification

### 2.0 Classification of the complete Product



GHS07

Signal Word

WARNING

#### Hazard Identification

#### Hazard Classes/Categories

H302

Acute Tox. 4 oral

H412

Aquatic Chronic 3

### 2.1 Classification of the substance or mixture

500 mL RA1



GHS07

Signal Word

WARNING

#### Hazard Identification

#### Hazard Classes/Categories

H302

Acute Tox. 4 oral

H412

Aquatic Chronic 3



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List of H phrases: see section 16.2

### 2.2 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

According the implementation of GHS immediate packages only must be labelled with product identifier(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012). Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A.

500 mL RA1



GHS07

Signal Word: WARNING

H302, H412

Harmful if swallowed. Harmful to aquatic life with long lasting effects.

P264W, P273, P301+312, P330

Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Avoid release to the environment. Rinse mouth.

### Label elements of the complete product



GHS07

Signal Word: WARNING

H302, H412

Harmful if swallowed. Harmful to aquatic life with long lasting effects.

P264W, P273, P301+312, P330

Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Avoid release to the environment. Rinse mouth.

### 2.3 Other Hazards

#### Possible Hazards from physicochemical Properties

For guanidine thiocyanate CAS 593-84-0: The properties H314, H332 "Causes severe skin burns and eye damage. Harmful if inhaled." are not relevant, because the mixture solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

#### Information pertaining to particular Risks to Human and possible Symptoms

Cause after oral intake, impairments of health when ingested in small quantities.

#### Information pertaining to particular Risks to the Environment

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

#### Possible endocrine disrupting effects

data not available

## SECTION 3: Composition/Information on Ingredients

### 3.1 Substances or 3.2 Mixtures

500 mL RA1

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Substance name:	<i>guanidinium thiocyanate</i>		
CAS No.:	593-84-0		
Substance rating:	H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3		
Chemical Formula:	C <sub>2</sub> H <sub>6</sub> N <sub>4</sub> S		
Synonyms (de):	Guanidiniumrhodanid		
REACH Reg. No.:	01-2120735072-65-0001		
EC No.:	209-812-1	Indice No.:	615-004-00-3
Concentration:	45 - <60 %		
acc. GHS:	H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3		

### 3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of Hazard and Precaution phrases: see section 16.2.

## SECTION 4: First-Aid Measures

### 4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice.

- 4.1.1 **After SKIN Contact**  
Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
- 4.1.2 **After EYE Contact**  
After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).
- 4.1.3 **After INHALATION of Vapors**  
After inhalation of foam or vapor fresh air should be inhaled. Keep airways free.
- 4.1.4 **After ORAL Intake**  
After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested.

### 4.2 Most important Symptoms and Effects, both acute and delayed

### 4.3 Indication of any immediate Medical Attention and Special Treatment needed

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## SECTION 5: Fire-Fighting Measures

### 5.1 Extinguishable Media

- 5.1.1 **Suitable extinguishing media**  
Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
- 5.1.2 **Unsuitable extinguishing media**  
data not available

### 5.2 Special Hazards arising from the Substance or Mixture

Formation of hazardous and caustic vapor-air mixtures possible.

### 5.3 Advice for Firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.  
For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

### 5.4 Additional Information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

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### SECTION 6: Accidental Release Measures

#### 6.1 Personal Precautions, Protective Equipment and Emergency Procedure

Do not breathe vapors. Wear suitable protective gloves (see 8.2.2). Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

#### 6.2 Environmental Precautions

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

#### 6.3 Methods and Material for Containment and Cleaning up

Bind any escaping liquid with inert absorbent.

And dispose in accordance to local regulations for the disposal of hazards. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into sewer.

#### 6.4 Reference to other Sections

see information in section 5.4,7,8 and 13

### SECTION 7: Handling and Storage

#### 7.1 Precautions for Safe Handling

Handling in accordance with the test instruction, that comes with the product.

#### 7.2 Conditions for Safe Storage, including any Incompatibilities

The original product package allows a safe storage. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 12

Water hazard class (DE): 3

#### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

#### 7.3 Specific End Use(s)

Product for analytical use.

### SECTION 8: Exposure Controls/Personal Protection

#### 8.1 Control Parameters

##### 500 mL RA1

Chemical: guanidinium thiocyanate

CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 42.4 µg/L

PNEC = Predicted No Effect Concentration

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

#### 8.2 Exposure Controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

##### 8.2.1 Respiratory Protection

No additional recommendations.

##### 8.2.2 Skin protection / Hand protection

Yes, gloves (permeation time >30 min - level 2), consist of PVC.

##### 8.2.3 Eye / Face Protection

Yes, Splash Goggles.

##### 8.2.4 Skin Protection

Recommended to avoid contamination with these hazards.

##### 8.2.5 Hygiene Measures

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

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### 8.2.6 Thermal hazards

data not available

### 8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

#### 500 mL RA1

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.13 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 9.2 Further Information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.  
**Properties relevant to substance groups**

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

No further data available.

### 10.2 Chemical Stability

no known instability.

### 10.3 Possibility of Hazardous Reactions

Can form very reactive substances with oxidizing agents. Possibility: &H:EUH031& No further data available.

### 10.4 Conditions to avoid

No more required.

### 10.5 Incompatible Materials

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### 10.6 Hazardous Decomposition Products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

## SECTION 11: Toxicological Information

### 11.1 Information on Toxicological Effects

Following information is valid for pure chemicals. Quantitative data on the toxicity of this product are not available.

500 mL RA1



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Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
TSCA Inventory: listed California Prop. 65 List: not listed  
Canada CEPA 1999: DSL yes  
LD50 orl rat : 593 mg/kg  
LC50 ihl rat : 5,319 mg/L/4H  
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

### 11.2 Other Hazards

#### Possible endocrine disrupting effects

data not available

#### Other Information

no additional data available

## SECTION 12: Ecological Information

### 12.1 Toxicity

Following information is valid for pure chemicals.

#### 500 mL RA1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
Harmful to aquatic life with long lasting effects. Avoid contact of chemical/mixture to environment.  
Environmental hazards must not be labelled with P phrases until 125 mL (EU-CLP 1272/2008 Annex I - 1.5.2).  
PNEC (fresh water) : 42.4 µg/L  
PNEC = Predicted No Effect Concentration  
LC50 fish/96h : [4d] 89.1 mg/L  
EC50 daphnia/48h : 42.4 mg/L  
IC50 scenedesmus quadricauda/72h : 130 mg/L  
EC10 pseudomonas putida/16h : [10d] 200 mg/L  
Partition Coefficient (o/w) : -1,11 pH 5.1

### 12.2 Persistence and Degradability

not necessary

### 12.3 Bioaccumulative Potential

not necessary

### 12.4 Mobility in Soil

not necessary

### 12.5 Results of PBT and vPvB Assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

### 12.6 Endocrine disrupting properties

data not available

### 12.7 Other Adverse Effects

no additional data available

## SECTION 13: Disposal Considerations

Do not collect in acidic waste. May form toxic gases.

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06).

### 13.1 Waste Treatment Methods

Normally it is possible to empty small amounts (diluted!) into drains.

## SECTION 14: Transport Information

14.1 - 14.4: No dangerous goods according to the Transport regulations

### 14.5 Environmental Hazards

none, contains only small quantities of hazardous substances, contains only small amounts of these substances



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### 14.6 Special Precautions for User

not necessary

### 14.7 Carriage of bulk cargo by sea in accordance with IMO instruments

Not applicable.

## SECTION 15: Regulatory Information

### 15.1 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

#### U.S. Federal Regulations

OSHA "A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"  
<https://www.osha.gov/dsg/hazcom/ghs.html>  
29 CFR 1910.1200 Hazard communication.  
NIOSH Pocket Guide to Chemical Hazards  
NIOSH Workplace Safety & Health Topics  
TSCA Inventory

#### U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

#### Canada

Canada CEPA 1999 - Domestic Substances List (DSL), List of Toxic Substances (Schedule 1)

MN Leaflet/User manual, also see [www.mn-net.com](http://www.mn-net.com)

### 15.2 Chemical Safety Assessment

not necessary for these small amounts

## SECTION 16: Other Information

### 16.1 Changes compared to the last version

in preparation

### 16.2 List of Hazard and Precaution Phrases

#### 16.2.1 List of relevant H Phrases

H302 Harmful if swallowed.  
H412 Harmful to aquatic life with long lasting effects.

#### 16.2.2 List of relevant P Phrases

P264W Wash with water thoroughly after handling.  
P273 Avoid release to the environment.  
P301+312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P330 Rinse mouth.

### 16.3 Recommended Restriction on Use

Only for Professional User.  
Look about employee restrictions for young people!  
Look about employee restrictions for pregnant women and nursing women!  
An individual package of this product or test kit has a moderate hazardous potential.

### 16.4 Sources of Key Data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021  
Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres  
SUVA .CH, limit values in the air at work 2009, revised on 01/2009  
Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)  
Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG  
Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)  
Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)  
Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)  
  
Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)  
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)  
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)  
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019  
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)  
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG  
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)  
Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)  
Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)



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### revisions/updates

Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary  
2014-04 adjustment according Regulation 487/2013/EU  
2016-03 adjustment according Regulation 1221/2015/EU  
  
2017-11 adjustment according the ECHA registration dossier  
2022-11 adjustment according Regulation 878/2020/EU

## 16.5 Further Information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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## 16.6 Legend / Abbreviations

acc: according  
ADR: Convention concerning the International Carriage of Dangerous Goods by Road  
Act: acute  
BAT: biological workplace tolerance value  
CAO: Cargo Aircraft Only  
Carc: carcinogen  
CAS: Chemical Abstracts Service  
CLP: Classification, Labelling and Packaging regulation  
CMR: carcinogen, mutagen, reproduction toxic  
Corr: corrosive  
COD: chemical oxygen demand  
CSCL: Chemical Substance Control Law (Jp)  
Dam: damage  
DNEL: Derived No-Effect Level (for workers)  
derm: dermal  
dog: dog  
EC10: Concentration causing a toxic effect in 10% of the test organisms  
EC: European Community  
EC-Nr: Substance number of the EC substance inventory  
EmS: Guide to accident management measures on ships  
EU: European Union  
fish: fish (not specified)  
GHS: Global Harmonized System of Classification and Labeling of Chemicals  
gpg: guinea pig  
ICAO: International Civil Aviation Organization  
ihl: inhaled  
IMDG: International Maritime Dangerous Goods Code  
intrav: intravenous  
ipt: intraperitoneal  
ISHL: Industrial Safety and Health Law (Jp)  
LC50: letale concentration 50%  
LD50: letale dosis 50%  
leuciscus idus: fisch, ide, orfe  
MAK: maximum workplace concentration  
Met: Metall  
mus: mouse  
Muta: mutagen  
NIOSH: National Institute for Occupational Safety and Health (US)  
NRD: Non-rapidly degradable  
onchorhynchus mykiss: fisch, rainbow trout  
orl: oral  
OSHA: Occupational Safety and Health Administration  
PAX: transport on passenger planes allowed  
PBT: persistent, bioaccumulating, toxic substance  
pH: pH value  
pimephales promelas: fisch, fathead minnow  
PNEC: Predicted No Effected Concentration  
PROC 15: Process category 'for laboratory use'



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PRTR: Law for PRTR and Promotion of Chemical Management (Jp)  
PVC: polyvinyl chloride  
quail: bird, quail  
rat: rat  
rbt: rabbit  
RD: rapidly degradable  
RE: repeated  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
REF: item number, reference number  
Reg.No.: rRegistration number  
Repr: harmful to reproduction  
Resp: respiratory  
scu: sub cutan  
RIP: REACH Implementations Projects  
SDS: safety data sheet  
Sens: sensitisation  
STEL: short term exposure limit  
STOT: Specific Target Organ Toxicity  
SVHC: Substance of Very High Concern  
t/a: tons per year  
TCCA: Toxic Chemicals Control Act (S. Korea)  
Tox: toxic  
TSCA: The Toxic Substances Control Act (US)  
TWA: time weighted average  
TRGS: technical regulations (DE)  
vPvB: very persistent, very bioaccumulating substance

### 16.7 Training Advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.