

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985049	NANOCOLOR Silver 3	Page: 1/10
Printing date: 27.09.2023	Date of issue: 15.06.2022	Version: 2.2.2.4

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

1.1 Product identifier

REF 985049
 Product name NANOCOLOR Silver 3

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

20 x 1.5 mL Silver 3 (R0)
 1 x 11 mL Silver 3 (R2) UFI: 9T8U-G3CG-T204-Q1CA
 1 x 11 mL Silver 3 (R3)

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 of the safety data sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Valencienner 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.
 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>>

Lieferant / Supplier:
 Carl Roth GmbH + Co KG
 Schöpperlenstr. 3-5
 76185 Karlsruhe, Germany
 +49 721 5606 0
 sicherheit@carlroth.de

SECTION 2: Hazard identification

2.0 Classification of the complete product according to Regulation (EC) 1272/2008



GHS08

Signal word	WARNING
Hazard identification	Hazard classes/categories
H373	STOT RE 2

2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

11 mL Silver 3 (R2)



GHS08



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Signal word	WARNING
Hazard identification	Hazard classes/categories
H373	STOT RE 2

11 mL Silver 3 (R3)

Signal word	Do not need labelling as hazardous
No hazard class	-

1.5 mL Silver 3 (R0)

Signal word	Do not need labelling as hazardous
No hazard class	-

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According CLP directive inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2).

11 mL Silver 3 (R2)



GHS08

Signal word: WARNING

11 mL Silver 3 (R3)

Do not need labelling as hazardous
Signal word: -

1.5 mL Silver 3 (R0)

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product



GHS08

Signal word: WARNING

2.3 Other hazards

Possible hazards from physicochemical properties

Information pertaining to particular risks to human and possible symptoms

Information pertaining to particular risks to the environment

Possible endocrine disrupting effects
no data available



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SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

11 mL Silver 3 (R3)

Substance name: *dimethyl sulfoxide*
 CAS No.: 67-68-5

Substance rating: No criteria for classification or naming of chemical not required.
 Formula: C_2H_6OS
 Pseudonym (de): DMSO
 REACH Reg. No.: 01-2119431362-50-xxxx
 EC No.: 200-664-3
 Concentration: 80 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

1.5 mL Silver 3 (R0)

Substance name: *citrate buffer solution*
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
 Concentration: 10 - <25 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

11 mL Silver 3 (R2)

Substance name: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
 CAS No.: 6381-92-6

Substance rating: H332, Acute Tox. 4 inh., H373, resp. irrit. STOT SE 3
 Formula: $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
 Pseudonym (de): Titriplex® III
 EC No.: 205-358-3
 Concentration: 5 - <10 %
 acc. CLP (GHS): H373, STOT RE 2

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of H and P 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 vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested.

4.2 Most important symptoms and effects, both acute and delayed



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4.3 Indication of any immediate medical attention and special treatment needed
 No additionally recommendations. ---

SECTION 5: Firefighting measures

5.1 Extinguishing 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. 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
 no data available

5.2 Special hazards arising from the substance or mixture
 Formation of hazardous and caustic vapour-air mixtures possible.

5.3 Advice for firefighters
 Product package burns like paper or plastic.

5.4 Additional information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
 Do not breathe vapours. Regular staff training is necessary.

6.2 Environmental precautions
 not necessary

6.3 Methods and material for containment and cleaning up
 Bind any escaping liquid with inert absorbent.
 Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
 Handling in accordance with the test instruction, that comes with the product. Use a safety bottle when shaking test tubes.

7.2 Conditions for safe storage, including any incompatibilities
 Safe storage is guaranteed in the original packaging . Storage class (German chemical industry): see chapter 12.1
Storage class (VCI): 12
Water hazard class (DE): 2

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

11 mL Silver 3 (R3)
 Chemical: *dimethyl sulfoxide* CAS No.: 67-68-5
 DNEL: 394 inh mg/m³
 DNEL = Derived No-Effect Level (for workers)
 PNEC (fresh water) : 17 mg/L
 PNEC = Predicted No Effect Concentration
 TRGS 900 (DE): 50 ppm / 160 mg/m³



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E/e respirable
 Short-term exposure factor: 2 (I), H, Z
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 50 ppm / 160 mg/m³

1.5 mL Silver 3 (R0)

Chemical: citrate buffer solution CAS No.: -

11 mL Silver 3 (R2)

Chemical: ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na) CAS No.: 6381-92-6

DNEL: [inh] 1.5 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.2 mg/L
 PNEC = Predicted No Effect Concentration

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 according EN 374 (permeation time >30 min - level 2), consist of PVC, natural latex, Neopren, or Nitril (f.ex. from Ansell or KCL). Use for short times chemical resistant latex gloves with code EN 374-3 level 1.

8.2.3 Eye / Face Protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection.

8.2.4 Skin protection

Not necessary.

8.2.5 Personal hygiene

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.

8.2.6 Thermal hazards

no data 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

11 mL Silver 3 (R3)

a) State of aggregation:	liquid
b) Colour:	red
c) Odor:	fusty, mouldy
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	95 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (o/w):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,09 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available



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1.5 mL Silver 3 (R0)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	fusty, mouldy
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	5-6
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (o/w):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

11 mL Silver 3 (R2)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (o/w):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

9.2 Other 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

No further data available.

10.4 Conditions to avoid

Observe the storage temperature printed on it.

10.5 Incompatible materials

no additional data available



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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 the hazard classes according regulation (EC) 1272/2008

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

11 mL Silver 3 (R3)

Chemical: *dimethyl sulfoxide*
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-32367
 LD50 orl rat : 14500 mg/kg

CAS No.: 67-68-5

1.5 mL Silver 3 (R0)

Chemical: *citrate buffer solution*
 TSCA Inventory: all listed
 Korea Exist.Chem.Inventory: listed

CAS No.: -

11 mL Silver 3 (R2)

Chemical: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
 TSCA Inventory: listed (CAS 139-33-3)
 LD50 orl rat : 2800 mg/kg

CAS No.: 6381-92-6

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.

11.2 Other hazards

Possible endocrine disrupting effects

no data available

Other information

no additional data available

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

11 mL Silver 3 (R3)

Chemical: *dimethyl sulfoxide*
 PNEC (fresh water) : 17 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 fish/96h : 38.5 g/L
 EC50 daphnia/48h : 24.6 g/L
 EC10 pseudomonas putita/16h : EC/16h: 7100 mg/L
 Water hazard class (DE): 1 WGK No.: 5050
 Dispersion coefficient (o/w) : -1,35
 Storage class (VCI): 12

CAS No.: 67-68-5

1.5 mL Silver 3 (R0)

Chemical: *citrate buffer solution*
 Water hazard class (DE): 0
 Storage class (VCI): 12

CAS No.: -

11 mL Silver 3 (R2)

Chemical: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
 PNEC (fresh water) : 2.2 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 fish/96h : [4d] 41-1592 mg/L
 EC50 daphnia/48h : 140 mg/L
 IC50 scenedesmus quadricauda/72h : [72h] 2.77-1000 mg/L
 EC10 pseudomonas putita/16h : [EC10, 30h] 500 mg/L
 Water hazard class (DE): 2

CAS No.: 6381-92-6



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Dispersion coefficient (o/w) : -4,3
Storage class (VCI): 12-13

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

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

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 (waste code number 16 05 06).

13.1 Waste treatment methods

Not necessary, see above.

SECTION 14: Transport information

14.1 - 14.4 Not necessary

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

14.6 Special precautions for user

not necessary

14.7 Carriage in bulk 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

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
TRGS 220, National aspects when preparing safety data sheets, Jan 2017
TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
MN leaflet/instructions for use, also at www.mn-net.com
If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts



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SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.2.4 and 2.2.2.2 following changes were applied: - 2 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H373 May cause damage to organs through prolonged or repeated exposure.

16.2.2 List of relevant P phrases

16.3 Recommended restriction on use

Only for professional user.

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)

Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

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 oxigen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage



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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:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fish, ide, orfe
MAK:	maximum workplace concentration
Met:	Metal
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, 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:	fish, fathead minnow
PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
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
RIP:	REACH Implementations Projects
scu:	sub cutan
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.



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