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

1.1 Product identifier
REF: 931041
Product name: VISOCOLOR ECO Nitrate

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.
1 x 30 mL NO₃⁻¹
1 x 5 g NO₃⁻²
UFI: D3EU-S3VC-320V-S3GJ

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>

SECTION 2: Hazard identification

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

GHS09

Signal word
NONE

Hazard identification Hazard classes/categories
H411 Aquatic Chronic 2

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

30 mL NO₃⁻¹

GHS07 GHS08 GHS09
Signal word: WARNING

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Acute Tox. 4 oral</td>
</tr>
<tr>
<td>H312</td>
<td>Acute Tox. 4 derm.</td>
</tr>
<tr>
<td>H317</td>
<td>Skin Sens. 1</td>
</tr>
<tr>
<td>H332</td>
<td>Acute Tox. 4 inh.</td>
</tr>
<tr>
<td>H341</td>
<td>Muta. 2</td>
</tr>
<tr>
<td>H411</td>
<td>Aquatic Chronic 2</td>
</tr>
</tbody>
</table>

5 g NO$_3$ -2

GHS09

Signal word: NONE

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H411</td>
<td>Aquatic Chronic 2</td>
</tr>
</tbody>
</table>

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 identificator(s) (EU 1272/2008 Annex I - 1.5.1.2). 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).

30 mL NO$_3$ -1

Do not need labelling as hazardous

Signal word: -

5 g NO$_3$ -2

GHS09

Signal word: NONE

Label elements of the complete product

GHS09

Signal word: NONE

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
SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

5 g NO₃-2
- Substance name: zinc powder (stabilized)
- CAS No.: 7440-66-6
- Substance rating: H410, Aquatic Chronic 1
- Formula: Zn
- REACH Reg. No.: 01-2119467174-37-xxxx
- EC No.: 231-175-3
- Indice No.: 030-002-01-9
- Concentration: 2.5 - <10 % acc.
- CLP (GHS): H411, Aquatic Chronic 2

30 mL NO₃-1
- Substance name: citric acid
- CAS No.: 77-92-9
- Substance rating: H319, Eye Irrit. 2, H335, resp. irrit. STOT SE 3
- Formula: C₆H₈O₇
- Pseudonym (de): Zitronensäure
- REACH Reg. No.: 01-2119457026-42-xxxx
- EC No.: 201-069-1
- Concentration: 1 - <10 %
- CLP (GHS): The criteria for classification are not fulfilled.

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

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.
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 931041  VISOCOLOR ECO Nitrate  Page: 4/10
Printing date: 27.09.2023  Date of issue: 06.07.2023  Version: 2.2.3.3

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
No, for listed product. 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, contains only small amounts of these substances

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.

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): 6.1D
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

5 g NO₃ -2
Chemical: zinc powder (stabilized)  CAS No.: 7440-66-6
DNEL: 1 inh. mg/m³
DNEL = Derived No-Effect Level (for workers)
TRGS 900 (DE): 0.1A / 2E mg/m³
E/e respirable

30 mL NO₃ -1
Chemical: citric acid  CAS No.: 77-92-9
PNEC (fresh water): 440 mg/L
PNEC = Predicted No Effect Concentration
TRGS 900 (DE): 2 E mg/m³
E/e respirable
Short-term exposure factor: 2 (I) Y
skin resorptive (H), respiratory sensizilizable (Sa), skin sensizilizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
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

5 g NO \(2\)
\begin{align*}
a) \text{State of aggregation:} & \quad \text{powder (solid)} \\
b) \text{Colour:} & \quad \text{slightly grey} \\
c) \text{Odor:} & \quad \text{odorless} \\
d) \text{Melting point:} & \quad \text{no data available} \\
e) \text{Boiling point:} & \quad \text{no data available} \\
f) \text{Flammability:} & \quad \text{no data available} \\
g) \text{Explosive limits (lower / upper):} & \quad \text{no data available} \\
h) \text{Flash point:} & \quad \text{no data available} \\
i) \text{Flashing temperature:} & \quad \text{no data available} \\
j) \text{Decomposition temperature:} & \quad \text{no data available} \\
k) \text{pH value:} & \quad 6.5-7.5 \\
l) \text{Kinematic viscosity:} & \quad \text{no data available} \\
m) \text{Solubility in water:} & \quad \text{no data available} \\
n) \text{Dispersion coefficient (\(\text{g/cm}^2\)) :} & \quad \text{no data available} \\
o) \text{Vapour pressure (20°C):} & \quad \text{no data available} \\
p) \text{Specific gravity:} & \quad \text{no data available} \\
q) \text{Relative vapour density (\(\text{air}=1\)) :} & \quad \text{no data available} \\
r) \text{Particle size:} & \quad \text{no data available}
\end{align*}

30 mL NO \(1\)
\begin{align*}
a) \text{State of aggregation:} & \quad \text{liquid} \\
b) \text{Colour:} & \quad \text{rose} \\
c) \text{Odor:} & \quad \text{odorless} \\
d) \text{Melting point:} & \quad \text{no data available} \\
e) \text{Boiling point:} & \quad \text{no data available} \\
f) \text{Flammability:} & \quad \text{no data available} \\
g) \text{Explosive limits (lower / upper):} & \quad \text{no data available} \\
h) \text{Flash point:} & \quad \text{no data available} \\
i) \text{Flashing temperature:} & \quad \text{no data available} \\
j) \text{Decomposition temperature:} & \quad \text{no data available} \\
k) \text{pH value:} & \quad 2-3 \\
l) \text{Kinematic viscosity:} & \quad \text{no data available} \\
m) \text{Solubility in water:} & \quad \text{no data available} \\
n) \text{Dispersion coefficient (\(\text{g/cm}^2\)) :} & \quad \text{no data available} \\
o) \text{Vapour pressure (20°C):} & \quad \text{no data available} \\
p) \text{Specific gravity:} & \quad \text{no data available} \\
q) \text{Relative vapour density (\(\text{air}=1\)) :} & \quad \text{no data available} \\
r) \text{Particle size:} & \quad \text{no data available}
\end{align*}
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

10.5 Incompatible materials
Avoid contact with concentrated acids and oxidizing agents.

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.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
<th>TSCA Inventory</th>
<th>Korea Exist. Chem. Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 g NO₃ ²⁻</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical: zinc powder (stabilized)</td>
<td>CAS No.: 7440-66-6</td>
<td>listed</td>
<td>KE-35518</td>
</tr>
<tr>
<td>LD50 orl rat</td>
<td>&gt; 2000 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC₅₀ Low inh mn</td>
<td>0.124 mg/L/50M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC₅₀ inh rat</td>
<td>5.41 mg/L/4H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
<th>TSCA Inventory</th>
<th>Korea Exist. Chem. Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mL NO₃⁻</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical: citric acid</td>
<td>CAS No.: 77-92-9</td>
<td>listed</td>
<td>KE-20831</td>
</tr>
<tr>
<td>LD50 orl rat</td>
<td>&gt; 3000 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC₅₀ inh rat</td>
<td>5,800 mg/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD₅₀ orl mus</td>
<td>5400 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD₅₀ scu rat</td>
<td>5500 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

5 g NO₃⁻ -2
Chemical: zinc powder (stabilized) CAS No.: 7440-66-6
Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment. Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).

LC50 fish/96h : 2.01 mg/L
EC50 daphnia/48h : 0.131 mg/L
EC50 pseudokirchneriella subcapitata/72h : 0.713 mg/L
Water hazard class (DE): 2
Storage class (VCI): 13

30 mL NO₃⁻ -1
Chemical: citric acid CAS No.: 77-92-9
PNEC (fresh water) : 440 mg/L
LC50 leuciscus idus/96h : 440-760 mg/L
EC50 daphnia/48h : 1535 24h mg/L
EC10 pseudomonas putida/16h : EC5: >10 g/L
Water hazard class (DE): 1
Dispersion coefficient (o/w) : -1.72
Storage class (VCI): 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
Normally it is possible to empty small amounts (diluted!) into drains.

SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according the transport regulations

14.5 Environmental hazards
none, contains only small quantities of hazardous substances, contains only small amounts of these 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

SECTION 16: Other information

16.1 Changes compared to the last version
Between versions 2.2.3.3 and 2.2.2.2 following changes were applied: - 1 composition data corrected - 1 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases
H411 Toxic to aquatic life with long lasting effects.

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, Regulation 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
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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
inh: 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: fish, rainbow trout
ori: 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
rbl: rabbit
RD: rapidly degradable
RE: repeated
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
REF: item number, reference number
Reg.No.: rRegistration number
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.