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

1.1 Product identifier

REF 915202
Product name VISOCOLOR HE Total Hardness H 2, refill pack

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 15 mL Ind. H 2
1 x 100 mL TL H 2

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
Tel.: +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

You find our current versions of SDS (22 languages) in Internet: **http://www.mn-net.com/SDS**

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS02 GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H315	Skin Irrit. 2
H319	Eye Irrit. 2

2.1 Classification of the substance or mixture

15 mL Ind. H 2



GHS02 GHS07

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Version: M V 4.12.0

Signal word WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H315	Skin Irrit. 2
H319	Eye Irrit. 2

100 mL TL H 2

Do not need labelling as hazardous

Signal word -

No hazard class

2.2 Label elements

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** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

15 mL Ind. H 2



GHS02 GHS07

Signal word: WARNING

100 mL TL H 2

Do not need labelling as hazardous
Signal word: -

2.3 Other hazards

Possible hazards from physicochemical properties
In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. ---

Information pertaining to particular risks to human and possible symptoms
---

Information pertaining to particular risks to the environment
---

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

15 mL Ind. H 2

Chemical: *triethanolamine* CAS No.: 102-71-6
Classification: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H335, STOT SE 3
Formula: $C_6H_{15}NO_3$
Pseudonym: 2,2',2"-nitrilotriethanol; tris(2-hydroxyethyl)amine
TSCA Inventory: listed
REACH Reg. No.: 01-2119486482-31-xxxx
Dual-use: The application of this chemical is exempt from the regulation 2017/2268/EU (see IC350 remark 4).
EC No.: 203-049-8
RTECS: KL9275000
KE No.: KE-25940
Concentration: 20 - <45 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

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Chemical: *ethanol* CAS No.: 64-17-5
(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
Classification: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym: ethyl alcohol, methylated spirit
TSCA Inventory: listed
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
RTECS: KQ6300000 MFCD: 00003568
KE No.: KE-13217
Concentration: 20 - <35 %
acc. CLP (GHS): H226, Flam. Liq. 3

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1
Classification: No criteria for classification or naming of chemical not required.
Formula: $C_4H_{11}NO_3$
Pseudonym: Trometamol, 2-amino-2-(hydroxymethyl)-1,3-propanediol
TSCA Inventory: listed
REACH Reg. No.: 01-2119957659-16-0014
EC No.: 201-064-4
RTECS: TY2900000 MFCD: 00004679
KE No.: KE-01403
Concentration: 3 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *indicator dye(s)* CAS No.: -
Classification: No criteria for classification or naming of chemical not required.
TSCA Inventory: all listed, <1%
Concentration: 0.1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL TL H 2

Chemical: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS No.: 6381-92-6
Classification: H332, Acute Tox. 4 inh., H373, STOT RE 2
Formula: $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
TSCA Inventory: listed (CAS 139-33-3)
EC No.: 205-358-3
RTECS: AH4410000; AH4375000 MFCD: 00150037
Concentration: 0.1 - <1 %
acc. 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 16.1

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. ---

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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

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.

5.2 Special hazards arising from the substance or mixture

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. 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

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

The original product package of MACHEREY-NAGEL allows a safe storage.
Storage class (VCI): 3
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

15 mL Ind. H 2
Chemical: *triethanolamine* CAS No.: 102-71-6
DNEL: [derm] 6.3; [inh] 5 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC(fresh water) : 0.32 mg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): - DFG: 5 E mg/m³
E/e respirable
Short-term exposure factor: I, (2)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: [MAK] 5 e/[STEL] 10 e mg/m³

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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

Chemical: *ethanol* CAS No.: 64-17-5
DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC(fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable
Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 500 ppm / 960 mg/m³
NIOSH: [TWA] 1000 ppm / 1900 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1
DNEL: [derm] 166.7 mg/kg bw/day; [inh] 117.5 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC(fresh water) : no data mg/L
PNEC = Predicted No Effected 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

Chemical: *indicator dye(s)* CAS No.: -

100 mL TL H 2
Chemical: *ethylendinitrilo 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 Effected 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 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 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

15 mL Ind. H 2

Appearance: liquid	Colour: green	Odor: aminic
pH:	>10	
Flash point:	29 °C	

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100 mL TL H 2

Appearance: liquid	Colour: colourless	Odor: aminic
pH:	9-10	
Solubility in water:	0-100 %	

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.
Relevant Properties of Substance Group

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 strong acids or alkalines.

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 substances. Quantitative data on the toxicity of this product are not available.

15 mL Ind. H 2

Chemical: *triethanolamine* CAS No.: 102-71-6
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: PAC Yes, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-25940
$LD50_{orl\ rat}$: > 5000 mg/kg
$LD50_{drm\ rbt}$: > 2000 mg/kg

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
$LD50_{orl\ rat}$: 6200 mg/kg
$LC_Low_{ihl\ gpg}$: 21.9 g/m³
$LC_Low_{orl\ hmn}$: 1400 mg/kg
$LC50_{ihl\ mouse}$: [4h] 39 g/m³
$LC50_{ihl\ rat}$: [10h] 20 g/m³
$LD50_{drm\ rbt}$: 20 000 mg/kg
$LD50_{oral\ mouse}$: 3450 mg/kg

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TRGS 905 (DE): K5, M5, R_F C

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-01403
$LD50_{orl\ rat}$: 5000 mg/kg

Chemical: *indicator dye(s)* CAS No.: -
TSCA Inventory: all listed, <1%

100 mL TL H 2

Chemical: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS No.: 6381-92-6
TSCA Inventory: listed (CAS 139-33-3)
$LD50_{orl\ rat}$: 2800 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

15 mL Ind. H 2

Chemical: *triethanolamine* CAS No.: 102-71-6
$PNEC_{(fresh\ water)}$: 0.32 mg/L
PNEC = Predicted No Effected Concentration
$LC50_{fish/96h}$: >1000 mg/L
$EC50_{daphnia/48h}$: $>1000_{24h}$ mg/L
Water hazard class (DE): 1 WGK No.: 0201
Dispersion coefficient$_{(octanol-water)}$: -2.3
Storage class (VCI): 12

Chemical: *ethanol* CAS No.: 64-17-5
$PNEC_{(fresh\ water)}$: 0.96 mg/L
PNEC = Predicted No Effected Concentration
$LC50_{daphnia\ magna/48h}$: >100 mg/L
$LC50_{pimephales\ promelas/96h}$: 13400 - 15100 mg/L
$LC50_{leuciscus\ idus/96h}$: [48h] 8140 mg/L
$LC50_{fish/96h}$: 13 g/L
$EC50_{daphnia/48h}$: 9.3-14.2 g/L
$IC50_{scenedesmus\ quadricauda/72h}$: [7d] 5000 mg/L
$EC10_{pseudomonas\ putita/16h}$: [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Dispersion coefficient$_{(octanol-water)}$: -0.31
Storage class (VCI): 3

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1
$PNEC_{(fresh\ water)}$: no data mg/L
PNEC = Predicted No Effected Concentration
$LC50_{fish/96h}$: LD0 (4d): 1-10 g/L
$EC50_{pseudokirchneriella\ subcapitata/72h}$: 397;$_{48h}$: 473 mg/L
$EC10_{pseudomonas\ putita/16h}$: 1_{3h} g/L
Water hazard class (DE): 2
Dispersion coefficient$_{(octanol-water)}$: -1.56
Storage class (VCI): 12-13

Chemical: *indicator dye(s)* CAS No.: -
Storage class (VCI): 12-13

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100 mL TL H 2

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

$PNEC_{(fresh\ water)}$:	2.2 mg/L
PNEC = Predicted No Effected 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
$Dispersion\ coefficient_{(octanol-water)}$:	-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

no data available

12.6 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. UN number: 3316 14.2. UN proper shipping name: Chemical Kit
14.3. Class: 9 14.4. Packing group: II

Road transport

Classification code:	M11	Tunnel restriction code:	E
Limited Quantity:	acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation		

Air transport

PAX:	960	max. weight PAX:	10 KG
CAO:	960	max. weight CAO:	10 KG

Maritime transport

EmS:	F-A, S-P	Storage category:	A

Or use **Alternative declaration for transportation:**
UN 1993 class 3 III, **Excepted Quantities** (≤30 mL/∑≤1 L) = ADR/ IATA E1
or

14.1 UN number: 1993 14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)
14.3 Class: 3 14.4 Packing group: III

Road transport

Classification code:	F1		
Limited Quantity:	5 L	Tunnel restriction code:	E
Excepted Quantity:	E 1	Special instructions:	640E

Air transport

PAX:	355	max. weight PAX:	60 L
CAO:	366	max. weight CAO:	220 L

Maritime transport

EmS:	F-E, S-E	Storage category:	A

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

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14.6 Special precautions for user

not necessary

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

not applicable

SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
MN Leaflet/User manual, also see www.mn-net.com
Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

16.1.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280sh	Wear protective gloves/eye protection.

16.2 Training advice

Regular safety training.

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 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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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
Regulation 849/2021/EU, 4th adaptation of CLP regulation to technical and scientific progress
TRGS 900, German engineering rules governing limits in air at work, updated 03/2019
SUVA .CH, Limits in air at work 2009, revised on 01.2009
KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU
2017-08 Adaption of new ethanol denaturation 2016/1867/EU

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