

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 814000

TLC Micro Set A

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Printing date: 02.06.2020

Date of issue: 20.05.2019

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

1.1 Product identifier

REF 814000
Product name TLC Micro Set A

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 100 mL Ammonia 25%/2-propanol (5:3)
1 x 100 mL Ethanol
1 x 8 mL Reference Solution A
1 x 8 mL Reference Solution B
1 x 8 mL Reference Solution C
1 x 8 mL Reference Solution E
1 x 8 mL Reference Solution F
1 x 100 mL Sodium citrate solution
1 x 8 mL Reference Solution D
1 x 8 mL Test dye/mixture 1
1 x 8 mL Test dye/mixture 2
1 x 8 mL Test dye/mixture 3
1 x 100 mL Toluene/Cyclohexane (2:1)
1 x 100 mL Toluene

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
Neumann-Neander-Str. 6-8, 52355 Dueren, 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



GHS05



GHS07



GHS08



GHS09

Signal word

DANGER

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Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H226	Flam. Liq. 3
H304	Asp. Tox. 1
H314	Skin Corr. 1B
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H335, H336	STOT SE 3
H336	not defined
H361d	Repr. 2
H373	STOT RE 2
H400	Aquatic Acute 1
H410	Aquatic Chronic 1

2.1 Classification of the substance or mixture

100 mL Ammonia 25%/2-propanol (5:3)



GHS02 GHS05 GHS07 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H314	Skin Corr. 1B
H319	Eye Irrit. 2
H335, H336	STOT SE 3
H400	Aquatic Acute 1

100 mL Ethanol



GHS02

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2

8 mL Reference Solution A



GHS02 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2

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8 mL Reference Solution B



Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2

8 mL Reference Solution C



Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2
H410	Aquatic Chronic 1

8 mL Reference Solution E

Signal word Do not need labelling as hazardous
-

No hazard class

8 mL Reference Solution F

Signal word Do not need labelling as hazardous
-

No hazard class

100 mL Sodium citrate solution

Signal word Do not need labelling as hazardous
-

No hazard class

8 mL Reference Solution D

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Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2
H410	Aquatic Chronic 1

8 mL Test dye/mixture 1



Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2

8 mL Test dye/mixture 2



Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2
H410	Aquatic Chronic 1

8 mL Test dye/mixture 3

Signal word Do not need labelling as hazardous
 -

No hazard class

100 mL Toluene/Cyclohexane (2:1)

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GHS02 GHS07 GHS08 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2
H410	Aquatic Chronic 1

100 mL Toluene



GHS02 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	not defined
H361d	Repr. 2
H373	STOT RE 2

2.2 Label elements

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).

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).

100 mL Ammonia 25%/2-propanol (5:3)



GHS02 GHS05 GHS07 GHS09

Signal word: DANGER

H314
 Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310
 Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

100 mL Ethanol



GHS02

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Signal word: DANGER

8 mL Reference Solution A



GHS02 GHS07 GHS08

Signal word: DANGER

H304, H361d

May be fatal if swallowed and enters airways. Suspected of damaging the unborn child.

P280sh, P301+310, P331

Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.

8 mL Reference Solution B



GHS02 GHS07 GHS08

Signal word: DANGER

H304, H361d

May be fatal if swallowed and enters airways. Suspected of damaging the unborn child.

P280sh, P301+310, P331

Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.

8 mL Reference Solution C



GHS02 GHS07 GHS08 GHS09

Signal word: DANGER

H304, H361d, H410

May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

P280sh, P301+310, P331, P391

Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting. Collect spillage.

8 mL Reference Solution E

Do not need labelling as hazardous

Signal word: -

8 mL Reference Solution F

Do not need labelling as hazardous

Signal word: -

100 mL Sodium citrate solution

Do not need labelling as hazardous

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Signal word: -

8 mL Reference Solution D



Signal word: DANGER

H304, H361d, H410
 May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

P280sh, P301+310, P331, P391
 Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting. Collect spillage.

8 mL Test dye/mixture 1



Signal word: DANGER

H304, H361d
 May be fatal if swallowed and enters airways. Suspected of damaging the unborn child.

P280sh, P301+310, P331
 Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.

8 mL Test dye/mixture 2



Signal word: DANGER

H304, H361d, H410
 May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

P280sh, P301+310, P331, P391
 Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting. Collect spillage.

8 mL Test dye/mixture 3

Do not need labelling as hazardous
 Signal word: -

100 mL Toluene/Cyclohexane (2:1)



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Signal word: DANGER

H304, H361d, H410

May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

P201, P280sh, P301+310, P331, P391

Obtain special instructions before use. Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting. Collect spillage.

100 mL Toluene



GHS02



GHS07



GHS08

Signal word: DANGER

H304, H361d

May be fatal if swallowed and enters airways. Suspected of damaging the unborn child.

P201, P280sh, P301+310, P331

Obtain special instructions before use. Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.

2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. 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

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities. Suspected of damaging the unborn child. May be fatal if swallowed and enters airways. -

Information pertaining to particular risks to the environment

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

PBT: not applicable

vPvB: not applicable

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

100 mL Ammonia 25%/2-propanol (5:3)

Chemical: ammonia solution

CAS No.: 1336-21-6

Classification: H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1

Formula: NH₃ • H₂O

Pseudonym: ammonium hydroxide, Aqua ammonia, aqueous ammonia

TSCA Inventory: listed

REACH Reg. No.: 01-2119488876-14-xxxx, 01-2119982985-14-XXXX

EC No.: 215-647-6

Indice No.: 007-001-01-2

RTECS: BQ9625000

MFCD: 00011418

KE No.: KE-01688, >10% Toxic 97-1-184

Concentration: 16 - <25 %

acc. CLP (GHS): H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1

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Chemical: *2-propanol* CAS No.: 67-63-0
 Classification: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3
 Formula: C₃H₈O
 Pseudonym: isopropanol, IPA, propan-2-ol
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119457558-25-XXXX
 EC No.: 200-661-7 Indice No.: 603-117-00-0
 RTECS: NT8050000 MFCD: 00011674
 KE No.: KE-29363
 Concentration: 20 - <35 %
 acc. CLP (GHS): H226, Flam. Liq. 3, H319, Eye Irrit. 2, H336, STOT SE 3

100 mL Ethanol

Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Formula: C₂H₆O; C₂H₅OH
 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: 90 - <98 %
 acc. CLP (GHS): H225, Flam. Liq. 2

8 mL Reference Solution A

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Formula: C₇H₈; CH₃-C₆H₅
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9 Indice No.: 601-021-00-3
 RTECS: XS5250000 MFCD: 00008512
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 95 - <100 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2

8 mL Reference Solution B

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Formula: C₇H₈; CH₃-C₆H₅
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9 Indice No.: 601-021-00-3
 RTECS: XS5250000 MFCD: 00008512
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 95 - <100 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2

8 mL Reference Solution C



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Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Formula: C₇H₈; CH₃-C₆H₅
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9 Indice No.: 601-021-00-3
 RTECS: XS5250000 MFCD: 00008512
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 60 - <80 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2

Chemical: *cyclohexane* CAS No.: 110-82-7
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1
 Formula: C₆H₁₂
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119463273-41-xxxx
 EC No.: 203-806-2 Indice No.: 601-017-00-1
 RTECS: GU6300000 MFCD: 00003814
 KE No.: KE-18562
 Concentration: 30 - <40 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1

Chemical: *dye(s) for testing* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

8 mL Reference Solution E

Chemical: *water* CAS No.: 7732-18-5
 Classification: No criteria for classification or naming of chemical not required.
 Formula: H₂O
 TSCA Inventory: listed
 REACH Reg. No.: exempt, Annex IV
 EC No.: 231-791-2
 RTECS: ZC0110000
 KE No.: KE-35400
 Concentration: 90 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *dye(s) for testing* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

8 mL Reference Solution F

Chemical: *water* CAS No.: 7732-18-5
 Classification: No criteria for classification or naming of chemical not required.
 Formula: H₂O
 TSCA Inventory: listed
 REACH Reg. No.: exempt, Annex IV
 EC No.: 231-791-2
 RTECS: ZC0110000
 KE No.: KE-35400
 Concentration: 90 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.



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Chemical: *dye(s) for testing* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL Sodium citrate solution

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $C_6H_5Na_3O_7 \cdot 2H_2O$
 TSCA Inventory: listed (CAS 68-04-2)
 REACH Reg. No.: 01-2119457027-40-xxxx
 EC No.: 200-675-3
 RTECS: GE8300000
 KE No.: KE-20843
 Concentration: 1 - <10 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

8 mL Reference Solution D

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Formula: C_7H_8 ; $CH_3-C_6H_5$
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9
 RTECS: XS5250000
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 60 - <80 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Indice No.: 601-021-00-3
 MFCD: 00008512

Chemical: *cyclohexane* CAS No.: 110-82-7
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1
 Formula: C_6H_{12}
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119463273-41-xxxx
 EC No.: 203-806-2
 RTECS: GU6300000
 KE No.: KE-18562
 Concentration: 30 - <40 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1
 Indice No.: 601-017-00-1
 MFCD: 00003814

Chemical: *dye(s) for testing* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

8 mL Test dye/mixture 1

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Formula: C_7H_8 ; $CH_3-C_6H_5$
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9
 RTECS: XS5250000
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 95 - <100 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2
 Indice No.: 601-021-00-3
 MFCD: 00008512

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8 mL Test dye/mixture 2

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373,
 STOT RE 2
 Formula: C₇H₈; CH₃-C₆H₅
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9
 RTECS: XS5250000
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 60 - <80 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373,
 STOT RE 2

Chemical: *cyclohexane* CAS No.: 110-82-7
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic
 1
 Formula: C₆H₁₂
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119463273-41-xxxx
 EC No.: 203-806-2
 RTECS: GU6300000
 KE No.: KE-18562
 Concentration: 30 - <40 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic
 1

Chemical: *dye(s) for testing* 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.

8 mL Test dye/mixture 3

Chemical: *water* CAS No.: 7732-18-5
 Classification: No criteria for classification or naming of chemical not required.
 Formula: H₂O
 TSCA Inventory: listed
 REACH Reg. No.: exempt, Annex IV
 EC No.: 231-791-2
 RTECS: ZC0110000
 KE No.: KE-35400
 Concentration: 90 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *dye(s) for testing* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL Toluene/Cyclohexane (2:1)

Chemical: *toluene* CAS No.: 108-88-3
 Classification: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373,
 STOT RE 2
 Formula: C₇H₈; CH₃-C₆H₅
 Pseudonym: methyl-benzene
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119471310-51-xxxx
 EC No.: 203-625-9
 RTECS: XS5250000
 KE No.: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 Concentration: 60 - <80 %
 acc. CLP (GHS): H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373,
 STOT RE 2

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Chemical:	<i>cyclohexane</i>	CAS No.:	110-82-7
Classification:	H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1		
Formula:	C ₆ H ₁₂		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119463273-41-xxxx		
EC No.:	203-806-2	Index No.:	601-017-00-1
RTECS:	GU6300000	MFCD:	00003814
KE No.:	KE-18562		
Concentration:	30 - <40 %		
acc. CLP (GHS):	H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H410, Aquatic Chronic 1		

100 mL Toluene

Chemical:	<i>toluene</i>	CAS No.:	108-88-3
Classification:	H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, H373, STOT RE 2		
Formula:	C ₇ H ₈ ; CH ₃ -C ₆ H ₅		
Pseudonym:	methyl-benzene		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119471310-51-xxxx		
EC No.:	203-625-9	Index No.:	601-021-00-3
RTECS:	XS5250000	MFCD:	00008512
KE No.:	KE-33936, Toxic 97-1-298, Acc. Precaution Chem.		
Concentration:	95 - <100 %		
acc. CLP (GHS):	H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, STOT SE 3, H361d, Repr. 2, 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 16.1

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. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and 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. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences. ---

4.2 Most important symptoms and effects, both acute and delayed

CMR Effects: Suspected of damaging the unborn child. ---

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESSES ensure that the patient inhales oxygen. ---

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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. DANGER: Highly flammable (GHS regulation). Forms 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. 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. ---

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. 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

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. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains. Not for organic solvents (see section 13).

6.4 Reference to other sections

see information in section 5.4 ---

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. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

100 mL Ammonia 25%/2-propanol (5:3)

Chemical: ammonia solution

CAS No.: 1336-21-6

DNEL: [inh] 14 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.0011 mg/L
PNEC = Predicted No Effect Concentration

EU value: 20 ppm / 14 mg/m³

TRGS 900 (DE): 20 ppm / 14 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 2 (I), Y
skin sorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 20 ppm / 14 mg/m³

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NIOSH: [TWA] 25 ppm / 18 mg/m³
 NIOSH STEL: 35 ppm / 27 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: Yes (TQ = 15000 lbs) - n/a; [TWA] 50 ppm / 35 mg/m³

Chemical: *2-propanol* CAS No.: 67-63-0

DNEL: [inh] 500 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC^(fresh water): 140.9 mg/L
 PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 ppm / 500 mg/m³
 A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 2 (II), Y
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 200 ppm / 500 mg/m³
 TRGS 903 (DE): [Aceton B/b, U/b] 25 mg/L
 B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [TWA] 400 ppm / 980 mg/m³
 NIOSH STEL: 500 ppm / 1225 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] 400 ppm / 980 mg/m³

100 mL Ethanol

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 Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
 A/a aveoles passing, E/e respirable, G total

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

8 mL Reference Solution A

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC^(fresh water): 0.68 mg/L
 PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
 A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
 B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

8 mL Reference Solution B

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC^(fresh water): 0.68 mg/L
 PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
 A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y

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skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift
 NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

8 mL Reference Solution C

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC^(fresh water): 0.68 mg/L
PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

Chemical: *cyclohexane* CAS No.: 110-82-7

DNEL: 700_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC^(fresh water): 0.207 mg/L
PNEC = Predicted No Effect Concentration

EU value: 200 ppm / 700 mg/m³
 TRGS 900 (DE): 200 ppm / 700 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 200 ppm / 700 mg/m³
 SUVA(CH) BAT value: U/b,c 150_{Kreatinin} mg/g
 TRGS 903 (DE): U/b,U/c 150_{Kreatinin} mg/g
B blood, U urine, a no limitation, b end of exposition or shift

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: *dye(s) for testing* CAS No.: -

8 mL Reference Solution E

Chemical: *water* CAS No.: 7732-18-5

Chemical: *dye(s) for testing* CAS No.: -

8 mL Reference Solution F

Chemical: *water* CAS No.: 7732-18-5

Chemical: *dye(s) for testing* CAS No.: -

100 mL Sodium citrate solution

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3



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8 mL Reference Solution D

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.68 mg/L
PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y
skin sorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

Chemical: *cyclohexane* CAS No.: 110-82-7

DNEL: 700_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.207 mg/L
PNEC = Predicted No Effect Concentration

EU value: 200 ppm / 700 mg/m³
 TRGS 900 (DE): 200 ppm / 700 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II)
skin sorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 200 ppm / 700 mg/m³
 SUVA(CH) BAT value: U/b,c 150_{Kreatinin} mg/g
 TRGS 903 (DE): U/b,U/c 150_{Kreatinin} mg/g
B blood, U urine, a no limitation, b end of exposition or shift

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: *dye(s) for testing* CAS No.: -

8 mL Test dye/mixture 1

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.68 mg/L
PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y
skin sorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

8 mL Test dye/mixture 2

Chemical: *toluene* CAS No.: 108-88-3

DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.68 mg/L
PNEC = Predicted No Effect Concentration

EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
A/a aveoles passing, E/e respirable, G total

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Short-term exposure factor: 4 (II), H, Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift
 NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

Chemical: *cyclohexane* CAS No.: 110-82-7
 DNEL: 700_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)
 PNEC_(fresh water): 0.207 mg/L
PNEC = Predicted No Effect Concentration
 EU value: 200 ppm / 700 mg/m³
 TRGS 900 (DE): 200 ppm / 700 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 200 ppm / 700 mg/m³
 SUVA(CH) BAT value: U/b,c 150_{Kreatinin} mg/g
 TRGS 903 (DE): U/b,U/c 150_{Kreatinin} mg/g
B blood, U urine, a no limitation, b end of exposition or shift
 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: *dye(s) for testing* CAS No.: -

8 mL Test dye/mixture 3

Chemical: *water* CAS No.: 7732-18-5

Chemical: *dye(s) for testing* CAS No.: -

100 mL Toluene/Cyclohexane (2:1)

Chemical: *toluene* CAS No.: 108-88-3
 DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
DNEL = Derived No-Effect Level (for workers)
 PNEC_(fresh water): 0.68 mg/L
PNEC = Predicted No Effect Concentration
 EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), H, Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
B blood, U urine, a no limitation, b end of exposition or shift
 NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

Chemical: *cyclohexane* CAS No.: 110-82-7
 DNEL: 700_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)
 PNEC_(fresh water): 0.207 mg/L
PNEC = Predicted No Effect Concentration
 EU value: 200 ppm / 700 mg/m³
 TRGS 900 (DE): 200 ppm / 700 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 200 ppm / 700 mg/m³
 SUVA(CH) BAT value: U/b,c 150_{Kreatinin} mg/g



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TRGS 903 (DE): U/b,U/c 150Kreatinin mg/g
 B blood, U urine, a no limitation, b end of exposition or shift
 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

100 mL Toluene

Chemical: *toluene* CAS No.: 108-88-3
 DNEL: [oral] 8.13 mg/kg bw; [inh] 192 mg/m³
 DNEL = Derived No-Effect Level (for workers)
 PNEC^(fresh water): 0.68 mg/L
 PNEC = Predicted No Effect Concentration
 EU value: 50 ppm / 190 mg/m³
 TRGS 900 (DE): 50 ppm / 190 mg/m³
 A/a aveoles passing, E/e respirable, G total
 Short-term exposure factor: 4 (II), H, Y
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: [MAK] 190/[STEL] 760 mg/m³
 SUVA(CH) BAT value: B/b 1,0 mg/L
 TRGS 903 (DE): B/b 600 µg/L
 B blood, U urine, a no limitation, b end of exposition or shift
 NIOSH: TWA 100 ppm / 375 mg/m³
 NIOSH STEL: TWA 150 ppm / 560 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 200 / C 300 / 500_{10min} ppm

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 (f.ex. from Ansell or KCL). Use for short times chemical resistant latex or nitril 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 or face protection.

8.2.4 Skin protection

Recommended to avoid clothing damage, and to avoid contamination with these hazards.

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

100 mL Ammonia 25%/2-propanol (5:3)

Appearance: liquid Colour: colourless Odor: aminic
 pH: 10-11
 Flash point: 25 °C

100 mL Ethanol

Appearance: liquid Colour: colourless Odor: alcoholic
 Odor limit: 19-93 mg/m³
 pH: 7
 Melting point: -114 °C
 Boiling point: 78 °C
 Flash point: 12 °C
 Explosion limits: 3.2-15 Vol%
 Vapour pressure (20°C): 59 hPa
 Vapour density_(air=1): 1,59
 Specific gravity: 0,79 g/cm³
 Solubility in water: 0-100 %



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Flashing temperature: 425 °C
 Volatiles by volume: 112 g/m³

8 mL Reference Solution A

Appearance: liquid	Colour: colourless	Odor: aromatic
Odor limit:	>0.6-153 mg/m ³	
Melting point:	-95 °C	
Boiling point:	111 °C	
Flash point:	6 °C	
Explosion limits:	1.2-7.8 Vol%	
Vapour pressure (20°C):	29 hPa	
Vapour density (air=1) :	3,2	
Specific gravity:	0,87 g/cm ³	
Solubility in water:	< 0,1 %	
Flashing temperature:	535 °C	
Volatiles by volume:	110 g/m ³	

8 mL Reference Solution B

Appearance: liquid	Colour: colourless	Odor: aromatic
Odor limit:	>0.6-153 mg/m ³	
Melting point:	-95 °C	
Boiling point:	111 °C	
Flash point:	6 °C	
Explosion limits:	1.2-7.8 Vol%	
Vapour pressure (20°C):	29 hPa	
Vapour density (air=1) :	3,2	
Specific gravity:	0,87 g/cm ³	
Solubility in water:	< 0,1 %	
Flashing temperature:	535 °C	
Volatiles by volume:	110 g/m ³	

8 mL Reference Solution C

Appearance: -	Colour: -	Odor: -
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8 mL Reference Solution E

Appearance: liquid	Colour: colored	Odor: odorless
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8 mL Reference Solution F

Appearance: liquid	Colour: colored	Odor: odorless
--------------------	-----------------	----------------

100 mL Sodium citrate solution

Appearance: liquid	Colour: colourless	Odor: odorless
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8 mL Reference Solution D

Appearance: -	Colour: -	Odor: -
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8 mL Test dye/mixture 1

Appearance: liquid	Colour: colourless	Odor: aromatic
Odor limit:	>0.6-153 mg/m ³	
Melting point:	-95 °C	
Boiling point:	111 °C	
Flash point:	6 °C	
Explosion limits:	1.2-7.8 Vol%	
Vapour pressure (20°C):	29 hPa	
Vapour density (air=1) :	3,2	
Specific gravity:	0,87 g/cm ³	
Solubility in water:	< 0,1 %	
Flashing temperature:	535 °C	
Volatiles by volume:	110 g/m ³	

8 mL Test dye/mixture 2

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Appearance: liquid	Colour: red	Odor: like chloroform
Odor limit:	50-200 mg/m ³	
Melting point:	-63.5 °C	
Boiling point:	61.7 °C	
Vapour pressure (20°C):	211 hPa	
Vapour density _(air=1) :	4,12	
Specific gravity:	1,48 g/cm ³	
Solubility in water:	< 1 %	
Flashing temperature:	982 °C	
Volatiles by volume:	1035 g/m ³	

8 mL Test dye/mixture 3

Appearance: liquid	Colour: colored	Odor: odorless
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100 mL Toluene/Cyclohexane (2:1)

Appearance: liquid	Colour: colourless	Odor: aromatic
Flash point:	6 °C	

100 mL Toluene

Appearance: liquid	Colour: colourless	Odor: aromatic
Odor limit:	>0.6-153 mg/m ³	
Melting point:	-95 °C	
Boiling point:	111 °C	
Flash point:	6 °C	
Explosion limits:	1.2-7.8 Vol%	
Vapour pressure (20°C):	29 hPa	
Vapour density _(air=1) :	3,2	
Specific gravity:	0,87 g/cm ³	
Solubility in water:	< 0,1 %	
Flashing temperature:	535 °C	
Volatiles by volume:	110 g/m ³	

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

Substances are very volatile and form flammable vapour-air mixtures. ---

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 react violently with organic material. No further data available.

10.4 Conditions to avoid

Not necessary. ---

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.

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100 mL Ammonia 25%/2-propanol (5:3)

Chemical: *ammonia solution* CAS No.: 1336-21-6
 TSCA Inventory: listed California Proposition 65 List: not listed
 Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact (solution/liquid)
 Target Organs: Eyes, skin, respiratory system
 Symptoms: irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema; pink frothy sputum; skin burns, vesiculation; I
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes, Toxic Substances (Schedule 1) Yes (Item 53.)
 Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
 Japan ISHL: listed $\geq 0,2\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-01688, >10% Toxic 97-1-184
 LD50_{orl rat}: 350 mg/kg
 LC_{LoWihl hmn}: 5000 mg/m³
 LC50_{ihl rat}: [4h] 2000 ppm
 LD50_{drm rbt}: [5min] 5000 ppm
 Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.

Chemical: *2-propanol* CAS No.: 67-63-0
 TSCA Inventory: listed California Proposition 65 List: not listed
 ACGIH: 1230 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system
 Symptoms: irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis
 Australia NICNAS: Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: PAC yes, Japan PDSCL: -
 Japan ISHL: listed $\geq 1,0\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA:
 Korea Exist.Chem.Inventory: KE-29363
 LD50_{orl rat}: 5045 mg/kg
 LC_{LoWorl hmn}: 3570 mg/kg
 LC50_{ihl rat}: 164h g/m³
 LD50_{drm rbt}: 12.8 g/kg
 TRGS 905 (DE): R_F C

100 mL Ethanol

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 $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWihl gpg}: 21.9 g/m³
 LC_{LoWorl 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
 TRGS 905 (DE): K5, M5, R_F C

8 mL Reference Solution A

Chemical: *toluene* CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes

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Japan CSCL/PRTR:	PAC Yes, PRTR: $\geq 1,0\%$ class I, Japan PDSCl: Deleterious substance
Japan ISHL:	listed $\geq 0,3\%/\geq 0,1\%$, Article 57-1+2 (Labelling&SDS required)
South Korea TCCA:	not listed
Korea Exist.Chem.Inventory:	KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
LD50 _{orl rat} :	5580 mg/kg
LC _{LoWihl hm} :	50 mg/m ³
LC50 _{ihl rat} :	[4h] 25,7-30 mg/L
LD50 _{drm rbt} :	5000 mg/kg

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

Carcinogenic Effects: Suspected of damaging the unborn child.

EU carcinogen: repr. 2

TRGS 905 (DE): R_F C

8 mL Reference Solution B

Chemical:	<i>toluene</i>	CAS No.: 108-88-3
TSCA Inventory:	listed	California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
ACGIH:	50 ppm	
Target Organs:	affect the eye or visual capacity, mild skin irritation	
Symptoms:	conjunctivitis; corneal damage	
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	PAC Yes, PRTR: $\geq 1,0\%$ class I, Japan PDSCl: Deleterious substance	
Japan ISHL:	listed $\geq 0,3\%/\geq 0,1\%$, Article 57-1+2 (Labelling&SDS required)	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	KE-33936, Toxic 97-1-298, Acc. Precaution Chem.	
LD50 _{orl rat} :	5580 mg/kg	
LC _{LoWihl hm} :	50 mg/m ³	
LC50 _{ihl rat} :	[4h] 25,7-30 mg/L	
LD50 _{drm rbt} :	5000 mg/kg	

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

Carcinogenic Effects: Suspected of damaging the unborn child.

EU carcinogen: repr. 2

TRGS 905 (DE): R_F C

8 mL Reference Solution C

Chemical:	<i>toluene</i>	CAS No.: 108-88-3
TSCA Inventory:	listed	California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
ACGIH:	50 ppm	
Target Organs:	affect the eye or visual capacity, mild skin irritation	
Symptoms:	conjunctivitis; corneal damage	
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	PAC Yes, PRTR: $\geq 1,0\%$ class I, Japan PDSCl: Deleterious substance	
Japan ISHL:	listed $\geq 0,3\%/\geq 0,1\%$, Article 57-1+2 (Labelling&SDS required)	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	KE-33936, Toxic 97-1-298, Acc. Precaution Chem.	
LD50 _{orl rat} :	5580 mg/kg	
LC _{LoWihl hm} :	50 mg/m ³	
LC50 _{ihl rat} :	[4h] 25,7-30 mg/L	
LD50 _{drm rbt} :	5000 mg/kg	

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

Carcinogenic Effects: Suspected of damaging the unborn child.

EU carcinogen: repr. 2

TRGS 905 (DE): R_F C

Chemical:	<i>cyclohexane</i>	CAS No.: 110-82-7
TSCA Inventory:	listed	California Proposition 65 List: not listed
Symptoms:	skin irritation; mild eye irritation	
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	PAC Yes, Japan PDSCl: not listed	
Japan ISHL:	listed $\geq 1,0\%/\geq 1,0\%$, Article 57-2 (SDS required)	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	KE-18562	
LD50 _{orl rat} :	12.7 g/kg	

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LC50_{ihl rat}: 14_{4h} mg/L
 LD50_{drm rbt}: >2000 mg/kg

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

8 mL Reference Solution E

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

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

8 mL Reference Solution F

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

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

100 mL Sodium citrate solution

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3
 TSCA Inventory: listed (CAS 68-04-2)
 Korea Exist.Chem.Inventory: KE-20843
 LD50_{orl rat}: >8000 mg/kg

8 mL Reference Solution D

Chemical: *toluene* CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR: ≥1,0% class I, Japan PDSCL: Deleterious substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 LD50_{orl rat}: 5580 mg/kg
 LC_{LoWihl hmn}: 50 mg/m³
 LC50_{ihl rat}: [4h] 25,7-30 mg/L
 LD50_{drm rbt}: 5000 mg/kg

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
 Carcinogenic Effects: Suspected of damaging the unborn child.
 EU carcinogen: repr. 2
 TRGS 905 (DE): R_F C

Chemical: *cyclohexane* CAS No.: 110-82-7
 TSCA Inventory: listed California Proposition 65 List: not listed
 Symptoms: skin irritation; mild eye irritation
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, Japan PDSCL: not listed
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-18562



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LD50_{orl rat} : 12.7 g/kg
 LC50_{ihl rat} : 14_{4h} mg/L
 LD50_{drm rbt} : >2000 mg/kg

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

8 mL Test dye/mixture 1

Chemical: toluene CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR: ≥1,0% class I, Japan PDSCL: Deleterious substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 LD50_{orl rat} : 5580 mg/kg
 LC_{Lowihl hmn} : 50 mg/m³
 LC50_{ihl rat} : [4h] 25,7-30 mg/L
 LD50_{drm rbt} : 5000 mg/kg

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
 Carcinogenic Effects: Suspected of damaging the unborn child.
 EU carcinogen: repr. 2
 TRGS 905 (DE): R_F C

8 mL Test dye/mixture 2

Chemical: toluene CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR: ≥1,0% class I, Japan PDSCL: Deleterious substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 LD50_{orl rat} : 5580 mg/kg
 LC_{Lowihl hmn} : 50 mg/m³
 LC50_{ihl rat} : [4h] 25,7-30 mg/L
 LD50_{drm rbt} : 5000 mg/kg

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
 Carcinogenic Effects: Suspected of damaging the unborn child.
 EU carcinogen: repr. 2
 TRGS 905 (DE): R_F C

Chemical: cyclohexane CAS No.: 110-82-7
 TSCA Inventory: listed California Proposition 65 List: not listed
 Symptoms: skin irritation; mild eye irritation
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, Japan PDSCL: not listed
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-18562
 LD50_{orl rat} : 12.7 g/kg
 LC50_{ihl rat} : 14_{4h} mg/L
 LD50_{drm rbt} : >2000 mg/kg

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

8 mL Test dye/mixture 3

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

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

100 mL Toluene/Cyclohexane (2:1)

Chemical: *toluene* CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR: ≥1,0% class I, Japan PDSCl: Deleterious substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 LD50_{orl rat}: 5580 mg/kg
 LC_{LoWhl hm}: 50 mg/m³
 LC50_{ihl rat}: [4h] 25,7-30 mg/L
 LD50_{drm rbt}: 5000 mg/kg

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
 Carcinogenic Effects: Suspected of damaging the unborn child.
 EU carcinogen: repr. 2
 TRGS 905 (DE): R_F C

Chemical: *cyclohexane* CAS No.: 110-82-7
 TSCA Inventory: listed California Proposition 65 List: not listed
 Symptoms: skin irritation; mild eye irritation
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, Japan PDSCl: not listed
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-18562
 LD50_{orl rat}: 12.7 g/kg
 LC50_{ihl rat}: 14_{4h} mg/L
 LD50_{drm rbt}: >2000 mg/kg

100 mL Toluene

Chemical: *toluene* CAS No.: 108-88-3
 TSCA Inventory: listed California Proposition 65 List: WARNING! Cause birth defects or other reproductive harms
 ACGIH: 50 ppm
 Target Organs: affect the eye or visual capacity, mild skin irritation
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR: ≥1,0% class I, Japan PDSCl: Deleterious substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-33936, Toxic 97-1-298, Acc. Precaution Chem.
 LD50_{orl rat}: 5580 mg/kg
 LC_{LoWhl hm}: 50 mg/m³
 LC50_{ihl rat}: [4h] 25,7-30 mg/L
 LD50_{drm rbt}: 5000 mg/kg

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



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Carcinogenic Effects: Suspected of damaging the unborn child.

EU carcinogen: repr. 2

TRGS 905 (DE): R_F C

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 mL Ammonia 25%/2-propanol (5:3)

Chemical: *ammonia solution*

CAS No.: 1336-21-6

Very toxic to aquatic life. 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).

PNEC_(fresh water): 0.0011 mg/L

PNEC = Predicted No Effect Concentration

LC50_{fish/96h}: 0,89 mg/L

EC50_{daphnia/48h}: 101 mg/L

Water hazard class (DE): 2 WGK No.: 0211

Storage class (VCI): 8 B

Chemical: *2-propanol*

CAS No.: 67-63-0

PNEC_(fresh water): 140.9 mg/L

PNEC = Predicted No Effect Concentration

LC50_{fish/96h}: 1400 mg/L

EC50_{daphnia/48h}: 13.3 g/L

IC50_{scenedesmus quadricauda/72h}: >1000 mg/L

EC10_{pseudomonas putida/16h}: EC5: 1050 mg/L

Water hazard class (DE): 1 WGK No.: 0135

Dispersion coefficient_(octanol-water): 0.05

Storage class (VCI): 3

100 mL Ethanol

Chemical: *ethanol*

CAS No.: 64-17-5

PNEC_(fresh water): 0.96 mg/L

PNEC = Predicted No Effect 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 putida/16h}: [EC5] 6500 mg/L

Water hazard class (DE): 1 WGK No.: 0096

Dispersion coefficient_(octanol-water): -0.31

Storage class (VCI): 3

8 mL Reference Solution A

Chemical: *toluene*

CAS No.: 108-88-3

PNEC_(fresh water): 0.68 mg/L

PNEC = Predicted No Effect Concentration

LC50_{daphnia magna/48h}: [4d] 3.78 mg/L

LC50_{fish/96h}: [4d] 5.5 mg/L

EC50_{daphnia/48h}: 3,23 mg/L

EC50_{pseudokirchneriella subcapitata/72h}: [3h] 134-207 mg/L

Water hazard class (DE): 2 WGK No.: 0194

Dispersion coefficient_(octanol-water): 2.73

Storage class (VCI): 3

8 mL Reference Solution B

Chemical: *toluene*

CAS No.: 108-88-3

PNEC_(fresh water): 0.68 mg/L

PNEC = Predicted No Effect Concentration

LC50_{daphnia magna/48h}: [4d] 3.78 mg/L

LC50_{fish/96h}: [4d] 5.5 mg/L

EC50_{daphnia/48h}: 3,23 mg/L

EC50_{pseudokirchneriella subcapitata/72h}: [3h] 134-207 mg/L

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Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient_(octanol-water): 2.73
 Storage class (VCI): 3

8 mL Reference Solution C

Chemical: *toluene* CAS No.: 108-88-3
 PNEC_(fresh water): 0.68 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{daphnia magna/48h}: [4d] 3.78 mg/L
 LC50_{fish/96h}: [4d] 5.5 mg/L
 EC50_{daphnia/48h}: 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h}: [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient_(octanol-water): 2.73
 Storage class (VCI): 3

Chemical: *cyclohexane* CAS No.: 110-82-7
 Very 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).
 PNEC_(fresh water): 0.207 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: 34 mg/L
 EC50_{daphnia/48h}: 3.8 mg/L
 Water hazard class (DE): 2 WGK No.: 0063
 Storage class (VCI): 3

Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

8 mL Reference Solution E

Chemical: *water* CAS No.: 7732-18-5
 Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

8 mL Reference Solution F

Chemical: *water* CAS No.: 7732-18-5
 Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

100 mL Sodium citrate solution

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3
 LC50_{fish/96h}: 18-32 g/L
 EC50_{daphnia/48h}: 5.6-10 g/L
 EC50_{chlorella vulgaris/5d}: >18-32 g/L
 EC10_{pseudomonas putita/16h}: EC50_{ps. fluorescens/8h}: >1.8-3.2 g/L
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

8 mL Reference Solution D

Chemical: *toluene* CAS No.: 108-88-3
 PNEC_(fresh water): 0.68 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{daphnia magna/48h}: [4d] 3.78 mg/L
 LC50_{fish/96h}: [4d] 5.5 mg/L
 EC50_{daphnia/48h}: 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h}: [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient_(octanol-water): 2.73
 Storage class (VCI): 3

Chemical: *cyclohexane* CAS No.: 110-82-7
 Very 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).
 PNEC_(fresh water): 0.207 mg/L



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PNEC = Predicted No Effected Concentration
 LC50_{fish/96h} : 34 mg/L
 EC50_{daphnia/48h} : 3.8 mg/L
 Water hazard class (DE): 2 WGK No.: 0063
 Storage class (VCI): 3

Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

8 mL Test dye/mixture 1

Chemical: *toluene* CAS No.: 108-88-3
 PNEC(fresh water) : 0.68 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h} : [4d] 3.78 mg/L
 LC50_{fish/96h} : [4d] 5.5 mg/L
 EC50_{daphnia/48h} : 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h} : [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient(octanol-water) : 2.73
 Storage class (VCI): 3

8 mL Test dye/mixture 2

Chemical: *toluene* CAS No.: 108-88-3
 PNEC(fresh water) : 0.68 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h} : [4d] 3.78 mg/L
 LC50_{fish/96h} : [4d] 5.5 mg/L
 EC50_{daphnia/48h} : 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h} : [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient(octanol-water) : 2.73
 Storage class (VCI): 3

Chemical: *cyclohexane* CAS No.: 110-82-7
 Very 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).
 PNEC(fresh water) : 0.207 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{fish/96h} : 34 mg/L
 EC50_{daphnia/48h} : 3.8 mg/L
 Water hazard class (DE): 2 WGK No.: 0063
 Storage class (VCI): 3

Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

8 mL Test dye/mixture 3

Chemical: *water* CAS No.: 7732-18-5
 Chemical: *dye(s) for testing* CAS No.: -
 Storage class (VCI): 12

100 mL Toluene/Cyclohexane (2:1)

Chemical: *toluene* CAS No.: 108-88-3
 PNEC(fresh water) : 0.68 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h} : [4d] 3.78 mg/L
 LC50_{fish/96h} : [4d] 5.5 mg/L
 EC50_{daphnia/48h} : 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h} : [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient(octanol-water) : 2.73
 Storage class (VCI): 3

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Chemical: *cyclohexane* CAS No.: 110-82-7
 Very 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).
 PNEC(fresh water) : 0.207 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h} : 34 mg/L
 EC50_{daphnia/48h} : 3.8 mg/L
 Water hazard class (DE): 2 WGK No.: 0063
 Storage class (VCI): 3

100 mL Toluene

Chemical: *toluene* CAS No.: 108-88-3
 PNEC(fresh water) : 0.68 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{daphnia magna/48h} : [4d] 3.78 mg/L
 LC50_{fish/96h} : [4d] 5.5 mg/L
 EC50_{daphnia/48h} : 3,23 mg/L
 EC50_{pseudokirchneriella subcapitata/72h} : [3h] 134-207 mg/L
 Water hazard class (DE): 2 WGK No.: 0194
 Dispersion coefficient(octanol-water) : 2.73
 Storage class (VCI): 3

- 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). Or collect in solvent waste (waste code number 07 07 04).

13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

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:**

14.1 UN number: 1993 **14.2 UN proper shipping name:** Flammable liquid, n.o.s. (toluene, 2-propanol, ethanol mixture)
14.3 Class: 3 **14.4 Packing group:** II
Road transport
 Classification code: F1 Tunnel restriction code: E
 Limited Quantity: 1 L Special instructions: 640C
 Excepted Quantity: E 2
Air transport
 PAX: 353 max. weight PAX: 5 L

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CAO: 364 max. weight CAO: 60 L
Maritime transport
 EmS: F-E, S-E Storage category: B

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 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

H225 Highly flammable liquid and vapour.
 H226 Flammable liquid and vapour.
 H304 May be fatal if swallowed and enters airways.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.
 H361d Suspected of damaging the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

16.1.2 List of relevant P phrases

P201 Obtain special instructions before use.
 P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 P233 Keep container tightly closed.
 P260D Do not breathe vapours.
 P260sh Do not breathe dust/vapours.
 P261sh Avoid breathing dust/vapours.
 P273 Avoid release to the environment.
 P280sh Wear protective gloves/eye protection.
 P301+310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P305+351+338 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.
 P331 Do NOT induce vomiting.
 P391 Collect spillage.
 P403+233 Store in a well-ventilated place. Keep container tightly closed.

16.2 Training advice

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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.

16.3 Recommended restriction on use

Only for professional user.

Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!

Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!

An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

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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

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

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work

TRGS 905, German engineering rules governing carcinogens and mutagens, updated 03/18

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