Safety Data Sheet

according to Regulations REACh 1907/2006/EC

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

1.1 Product identifier

REF 814400
Product name TLC Micro Set F 3

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

1 x 100 mL 2-Propanol
1 x 100 mL Toluene/Diethyl ether (55:35)
1 x 100 mL Caffeine spray reagent UFI: 173V-93P0-F20M-H2UE
1 x 100 mL Spray reagent acc. to Dragendorff-Munier UFI: MA3V-T3CD-S203-5EEG
1 x 50 mL Iron(III) chloride solution
1 x 50 mL Potassium hexacyanoferrate(III) solution
1 x 25 mL Ammonia solution 12.5%
1 x 25 mL Diethylamine
1 x 100 mL Ethanol
1 x 30 mL Acetic acid ethyl ester
1 x 8 ml TLC reference solution quinine F10
1 x 8 ml TLC reference solution caffeine F10
1 x 8 ml DC Vergleichslösung Paracetamol F10

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses
Product for analytical use.
Exposure Scenario Classification according REACh, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
The exposure scenario is integrated into sections 1-16.
Uses advised against
not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
MACHEREY-NAGEL GmbH & Co. KG
Valencienner Str. 11, 52355 Düren, Germany
Phone: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
DE: Gemeinsames Giftinformationszentrum (GGIZ)
99089 Erfurt tel. +49 361 730 730, **<https://www.ggiz-erfurt.de>**

You find our current versions of SDS in Internet: **<http://www.mn-net.com/SDS>**

SECTION 2: Hazard identification

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



GHS02 GHS05 GHS07 GHS08 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H304	Asp. Tox. 1
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.
H335	STOT SE 3
H336	STOT SE 3
H361d	Repr. 2
H373	STOT RE 2
H400	Aquatic Acute 1
H412	Aquatic Chronic 3
EUH066	Skin Irrit. 2

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

100 mL Spray reagent acc. to Dragendorff-Munier



GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
H319	Eye Irrit. 2

100 mL Toluene/Diethyl ether (55:35)



GHS02 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
EUH066	Skin Irrit. 2
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H304	Asp. Tox. 1
H315	Skin Irrit. 2
H336	STOT SE 3
H361d	Repr. 2
H373	STOT RE 2

25 mL Diethylamine



GHS02 GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.

8 ml TLC reference solution quinine F10



GHS02

Signal word DANGER

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

25 mL Ammonia solution 12.5%



GHS05 GHS07 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H314	Skin Corr. 1B
H335	STOT SE 3
H400	Aquatic Acute 1

50 mL Potassium hexacyanoferrate(III) solution

Do not need labelling as hazardous

Signal word -

No hazard class

30 mL Acetic acid ethyl ester



GHS02 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
EUH066	Skin Irrit. 2
H225	Flam. Liq. 2
H319	Eye Irrit. 2
H336	STOT SE 3

8 ml TLC reference solution caffeine F10



GHS02

Signal word DANGER

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

8 ml DC Vergleichslösung Paracetamol F10



GHS02

Signal word DANGER

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

100 mL Ethanol



GHS02

Signal word DANGER

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

100 mL 2-Propanol



GHS02 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H319	Eye Irrit. 2
H336	STOT SE 3

100 mL Caffeine spray reagent



GHS02 GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
EUH066	Skin Irrit. 2
H225	Flam. Liq. 2
H318	Eye Dam. 1
H336	STOT SE 3
H412	Aquatic Chronic 3

50 mL Iron(III) chloride solution

Do not need labelling as hazardous

Signal word -

No hazard class

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product 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).

100 mL Spray reagent acc. to Dragendorff-Munier



GHS07

Signal word: WARNING

100 mL Toluene/Diethyl ether (55:35)



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.

25 mL Diethylamine



GHS02 GHS05 GHS07

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.

8 ml TLC reference solution quinine F10



GHS02

Signal word: DANGER

25 mL Ammonia solution 12.5%



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.

50 mL Potassium hexacyanoferrate(III) solution

Do not need labelling as hazardous
Signal word: -

30 mL Acetic acid ethyl ester



GHS02 GHS07

Signal word: DANGER

8 ml TLC reference solution caffeine F10



GHS02

Signal word: DANGER

8 ml DC Vergleichslösung Paracetamol F10



GHS02

Signal word: DANGER

100 mL Ethanol



GHS02

Signal word: DANGER

100 mL 2-Propanol



GHS02 GHS07

Signal word: DANGER

100 mL Caffeine spray reagent



GHS02 GHS05

Signal word: DANGER
H318
Causes serious eye damage.
P280sh, P305+351+338, P310
Wear protective gloves/eye protection.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.

50 mL Iron(III) chloride solution

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product



GHS02 GHS05 GHS08 GHS09

Signal word: DANGER
H304, H314, H361d
May be fatal if swallowed and enters airways.Causes severe skin burns and eye damage.Suspected of damaging the unborn child.
P201, P260sh, P280sh, P301+310, P303+361+353, P305+351+338, P331
Obtain special instructions before use.Do not breathe dust/vapours.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.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.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 oral intake, 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
Avoid contact of substance/mixture to environment.
PBT: not applicable
vPvB: not applicable

Possible endocrine disrupting effects
no data available

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

25 mL Diethylamine

Substance name: *diethylamine*
CAS No.: 109-89-7

Substance rating: H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.
Formula: $C_4H_{11}N$; $(C_2H_5)_2NH$
Pseudonym (de): DEA, Ethylethanamin
REACH Reg. No.: 01-2119475610-41-xxxx
Dual-use: This application is exempt from the regulation 2006/394/EC (see IC350 remark 4).
EC No.: 203-716-3 Indice No.: 612-003-00-X
Concentration: 80 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.

30 mL Acetic acid ethyl ester

Substance name: *ethyl acetate*
CAS No.: 141-78-6

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3, EUH066, Skin Irrit. 2
Formula: $C_4H_8O_2$
Pseudonym (de): Essigsäureethylester
REACH Reg. No.: 01-2119475103-46-xxxx
EC No.: 205-500-4 Indice No.: 607-022-00-5
Concentration: 80 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3, EUH066, Skin Irrit. 2

25 mL Ammonia solution 12.5%

Substance name: *ammonia solution*
CAS No.: 1336-21-6

Substance rating: H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1
Formula: $NH_3 \cdot H_2O$
Pseudonym (de): Salmiakgeist
REACH Reg. No.: 01-2119488876-14-xxxx, 01-2119982985-14-XXXX
EC No.: 215-647-6 Indice No.: 007-001-01-2
Concentration: 10 - <16 %
acc. CLP (GHS): H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1

100 mL Caffeine spray reagent

Substance name: *iron(III) chloride*
CAS No.: 7705-08-0

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1
Formula: $FeCl_3$
Pseudonym (de): Ferritrichlorid
REACH Reg. No.: 01-2119497998-05-xxxx
EC No.: 231-729-4
Concentration: 3 - <10 %
acc. CLP (GHS): H318, Eye Dam. 1

Substance name: *iodine*
CAS No.: 7553-56-2

Substance rating: H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh., H400, Aquatic Acute 1
Formula: I_2
Pseudonym (de): Jod
REACH Reg. No.: 01-2119485285-30-xxxx
EC No.: 231-442-4 Indice No.: 053-001-00-3
Concentration: 1 - <2,5 %
acc. CLP (GHS): H412, Aquatic Chronic 3

Substance name: *L(+)-tartaric acid*
CAS No.: 87-69-4

Substance rating: H319, Eye Irrit. 2
Formula: $C_4H_6O_6$
Pseudonym (de): L(+)-2,3-Dihydroxylbernsteinsäure
REACH Reg. No.: 01- 2119537204-47-xxxx
EC No.: 201-766-0
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *acetone*
CAS No.: 67-64-1

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3, EUH066, Skin Irrit. 2
Formula: C_3H_6O; $(CH_3)_2$-CO
Pseudonym (de): 2-Propanon
REACH Reg. No.: 01-2119471330-49-xxxx
EC No.: 200-662-2 Indice No.: 606-001-00-8
Concentration: 25 - <40 %
acc. CLP (GHS): H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3, EUH066, Skin Irrit. 2

100 mL Spray reagent acc. to Dragendorff-Munier

Substance name: *L(+)-tartaric acid*
CAS No.: 87-69-4

Substance rating: H319, Eye Irrit. 2
Formula: $C_4H_6O_6$
Pseudonym (de): L(+)-2,3-Dihydroxylbernsteinsäure
REACH Reg. No.: 01- 2119537204-47-xxxx
EC No.: 201-766-0
Concentration: 10 - <20 %
acc. CLP (GHS): H319, Eye Irrit. 2

Substance name: *bismuth(III) nitrate, basic*
CAS No.: 10361-46-3

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H335, STOT SE 3
Formula: $Bi_5H_9N_4O_{22}$
Pseudonym (de): Bismutsubnitrat
REACH Reg. No.: None 2017
EC No.: 215-136-8
Concentration: 1 - <3 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *potassium iodide*
CAS No.: 7681-11-0

Substance rating: H319, Eye Irrit. 2
Formula: KI
Pseudonym (de): Iodkalium
REACH Reg. No.: YES, confidential
EC No.: 231-659-4
Concentration: 10 - <20 %
acc. CLP (GHS): H319, Eye Irrit. 2

50 mL Potassium hexacyanoferrate(III) solution

Substance name: *potassium hexacyanoferrate(III)*
CAS No.: 13746-66-2

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H335, STOT SE 3, H411, Aquatic Chronic 2, EUH032, not defined
Formula: $C_6FeK_3N_6$
Pseudonym (de): rotes Blutlaugensalz, Ferricyankalium
EC No.: 237-323-3
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL Toluene/Diethyl ether (55:35)

Substance name: *diethyl ether, ether*
CAS No.: 60-29-7

Substance rating: H224, Flam. Liq. 1, H302, Acute Tox. 4 oral, H336, STOT SE 3, EUH019, Org. Perox. G, EUH066, Skin Irrit. 2
Formula: $C_4H_{10}O$
Pseudonym (de): Äther, Ether
REACH Reg. No.: 01-2119535785-29-xxxx
EC No.: 200-467-2 Indice No.: 603-020-00-4
Concentration: 10 - <40 %
acc. CLP (GHS): H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H336, STOT SE 3, EUH066, Skin Irrit. 2

Substance name: *toluene*
CAS No.: 108-88-3

Substance rating: H225, Flam. Liq. 2, H304, Asp. Tox. 1, H315, Skin Irrit. 2, H336, not defined, H361d, Repr. 2, H373, STOT RE 2
Formula: C_7H_8 ; CH_3-C_6H_5
Pseudonym (de): Toluen, Methylbenzol
REACH Reg. No.: 01-2119471310-51-xxxx
EC No.: 203-625-9 Indice No.: 601-021-00-3
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

100 mL Ethanol

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

8 ml TLC reference solution quinine F10

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

Substance name: *Quinine*
CAS No.: 130-95-0

Substance rating: No criteria for classification or naming of chemical not required.
EC No.: 205-003-2
Concentration: 0,01 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

8 ml TLC reference solution caffeine F10

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

8 ml DC Vergleichslösung Paracetamol F10

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

50 mL Iron(III) chloride solution

Substance name: *iron(III) chloride*
CAS No.: 7705-08-0

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1
Formula: $FeCl_3$
Pseudonym (de): Ferritrichlorid
REACH Reg. No.: 01-2119497998-05-xxxx
EC No.: 231-729-4
Concentration: 1 - <2 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL 2-Propanol

Substance name: *2-propanol*
CAS No.: 67-63-0

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3
Formula: C_3H_8O
Pseudonym (de): Isopropanol, IPA, Propan-2-ol
REACH Reg. No.: 01-2119457558-25-XXXX
EC No.: 200-661-7 Indice No.: 603-117-00-0
Concentration: 95 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3

3.3 Remarks

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

SECTION 4: First aid measures

4.1 Description of first aid measures

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

Rapid penetration and destruction of the skin. Especially in the heated form.
Causes severe skin burns and eye damage.
CMR Effekte: 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 DISTREES ensure that the patient inhales oxygen. ---

SECTION 5: Firefighting measures

5.1 Extinguishing media

5.1.1 **Suitable extinguishing media**
Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

5.1.2 **Unsuitable extinguishing media**
no data available

5.2 Special hazards arising from the substance or mixture

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

Avoid contact of substance/mixture to environment.
PBT: not applicable
vPvB: not applicable

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of 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 5.4,7,8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

Safe storage is guaranteed in the original packaging . Storage class (German chemical industry): see chapter 12.1

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

25 mL Diethylamine

Chemical: *diethylamine* CAS No.: 109-89-7

EU value: 5 ppm / 15 mg/m³

TRGS 900 (DE): 2 mL/m³ / 6,1 mg/m³
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 2 (I), =2,5=, H
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 5 ppm / 15 mg/m³

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

30 mL Acetic acid ethyl ester

Chemical: *ethyl acetate* CAS No.: 141-78-6

DNEL: [derm] 63 mg/kg; [inh] 730 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water) : 0.26 mg/L
PNEC = Predicted No Effected Concentration

EU value: [TWA] 734 / [STEL] 1468 mg/m³

TRGS 900 (DE): 200 mL/m³ / 730 mg/m³
A/a aveoles passing, E/e respirable, G total

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

SUVA(CH) MAK value: 400 ppm / 1400 mg/m³

25 mL Ammonia solution 12.5%

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

SUVA(CH) MAK value: 20 ppm / 14 mg/m³

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

100 mL Caffeine spray reagent

Chemical: *iron(III) chloride* CAS No.: 7705-08-0
SUVA(CH) MAK value: 1 e mg/m³

Chemical: *iodine* CAS No.: 7553-56-2
EU value: STEL 0.1 ppm / 1.1 mg/m³
SUVA(CH) MAK value: 0,1 ppm / 1 mg/m³
NIOSH: C 0.1 ppm / 1 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: C 0.1 ppm / 1 mg/m³

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
SUVA(CH) MAK value: [MAK] 2 e/[STEL] 4 e mg/m³

Chemical: *acetone* CAS No.: 67-64-1
DNEL: [inh] (1210) mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 10.6 mg/L
PNEC = Predicted No Effected Concentration
EU value: 500 ppm / 1200 mg/m³
TRGS 900 (DE): 500 mL/m³ / 1200 mg/m³
A/a aveoles passing, E/e respirable, G total
Short-term exposure factor: 2 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 500 ppm/ 1200 mg/m³
SUVA(CH) BAT value: [U/b] 80 mg/L
TRGS 903 (DE): [U/b] 80 mg/L
B blood, U urine, a no limitation, b end of exposition or shift
NIOSH: [TWA] 250 ppm / [STEL] 590 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 / [STEL] 2400 mg/m³

100 mL Spray reagent acc. to Dragendorff-Munier

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
SUVA(CH) MAK value: [MAK] 2 e/[STEL] 4 e mg/m³

Chemical: *bismuth(III) nitrate, basic* CAS No.: 10361-46-3

Chemical: *potassium iodide* CAS No.: 7681-11-0

50 mL Potassium hexacyanoferrate(III) solution

Chemical: *potassium hexacyanoferrate(III)* CAS No.: 13746-66-2

100 mL Toluene/Diethyl ether (55:35)

Chemical: *diethyl ether, ether* CAS No.: 60-29-7
EU value: 400 ppm / 1200 mg/m³
TRGS 900 (DE): 100 ppm / 308 mg/m³
A/a aveoles passing, E/e respirable, G total
Short-term exposure factor: 1 (I)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 400 ppm / 1200 mg/m³
NIOSH: Appendix D: TWA 400 ppm; STEL 500 ppm
[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 / 1200 mg/m³

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 Effected 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

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 Effected 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 TLC reference solution quinine F10

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
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

Chemical: *Quinine* CAS No.: 130-95-0

8 ml TLC reference solution caffeine F10

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
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 DC Vergleichslösung Paracetamol F10

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
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

50 mL Iron(III) chloride solution
Chemical: *iron(III) chloride* CAS No.: 7705-08-0
SUVA(CH) MAK value: 1 e mg/m³

100 mL 2-Propanol
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 Effected 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

8.2 Exposure controls

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

8.2.1 Respiratory protection
No additional recommendations.

8.2.2 Skin protection / Hand protection
Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC (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 / Face 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.

8.2.6 Thermal hazards
no data available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

25 mL Diethylamine

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	aminic
d) Melting point:	-48 °C
e) Boiling point:	56 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	1.7 ...10.1 Vol%
h) Flash point:	-23 °C
i) Flashing temperature:	310 °C
j) Decomposition temperature:	no data available
k) pH value:	13
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %

n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	260 hPa
p) Specific gravity:	0,71 g/cm³
q) Relative vapour density $_{(air=1)}$:	2,53
r) Particle size:	no data available

30 mL Acetic acid ethyl ester

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	aromatic
d) Melting point:	-84 °C
e) Boiling point:	77 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	2.1-11.5 Vol%
h) Flash point:	-4 °C
i) Flashing temperature:	460 °C
j) Decomposition temperature:	no data available
k) pH value:	6-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-8 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	92 hPa
p) Specific gravity:	0,90 g/cm³
q) Relative vapour density $_{(air=1)}$:	3,04
r) Particle size:	no data available

25 mL Ammonia solution 12.5%

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	aminic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	10-11
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	0,95 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL Caffeine spray reagent

a) State of aggregation:	liquid
b) Colour:	slightly yellow
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	2-3
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available

r) Particle size:	no data available

100 mL Spray reagent acc. to Dragendorff-Munier

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

50 mL Potassium hexacyanoferrate(III) solution

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

100 mL Toluene/Diethyl ether (55:35)

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

100 mL Ethanol

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	-114 °C
e) Boiling point:	78 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	3.2-15 Vol%
h) Flash point:	12 °C
i) Flashing temperature:	425 °C
j) Decomposition temperature:	no data available
k) pH value:	7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	59 hPa
p) Specific gravity:	0,79 g/cm³
q) Relative vapour density $_{(air=1)}$:	1,59
r) Particle size:	no data available

8 ml TLC reference solution quinine F10

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

8 ml TLC reference solution caffeine F10

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

8 ml DC Vergleichslösung Paracetamol F10

a) State of aggregation:	liquid
b) Colour:	
c) Odor:	
d) Melting point:	no data available

e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	no data available
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

50 mL Iron(III) chloride solution

a) State of aggregation:	liquid
b) Colour:	slightly yellow
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	4-5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL 2-Propanol

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	-90 °C
e) Boiling point:	82 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	2-12.7 Vol%
h) Flash point:	12 °C
i) Flashing temperature:	425 °C
j) Decomposition temperature:	no data available
k) pH value:	no data available
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	43 hPa
p) Specific gravity:	0,785 g/cm³
q) Relative vapour density $_{(air=1)}$:	2,08
r) Particle size:	no data available

9.2 Other information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

Properties relevant to substance groups

Substances are highly volatile and form flammable gas-air mixtures. Substances are highly corrosive.

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

No more required.

10.5 Incompatible materials

no additional data available

10.6 Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 Information on the hazard classes according regulation (EC) 1272/2008

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

25 mL Diethylamine

Chemical: *diethylamine* CAS No.: 109-89-7
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: Article 57-2 (SDS required)
South Korea TCCA: not listed
LD50 $_{orl\ rat}$: 540 mg/kg
Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.
TRGS 905 (DE): R $_{F}$ D

30 mL Acetic acid ethyl ester

Chemical: *ethyl acetate* CAS No.: 141-78-6
TSCA Inventory: listed
Target Organs: affect the eye or visual capacity
Symptoms: conjunctivitis; corneal damage
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious substance
Japan ISHL: listed ≥1,0%/≥1,0%
Korea Exist.Chem.Inventory: KE-00047, Toxic 97-1-161
LD50 $_{orl\ rat}$: 5620 mg/kg

TRGS 905 (DE): R $_{F}$ C

25 mL Ammonia solution 12.5%

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; l
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 ≥0,2%/≥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_Low $_{ihl\ hmn}$: 5,000 mg/L
LC50 $_{ihl\ rat}$: 2000 ppm/4H
Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.

100 mL Caffeine spray reagent

Chemical: *iron(III) chloride* CAS No.: 7705-08-0
TSCA Inventory: listed
Japan ISHL: listed >1,0%/>1,0%
LD50 orl rat : 450 mg/kg

Chemical: *iodine* CAS No.: 7553-56-2
TSCA Inventory: listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, cardiovascular system
Symptoms: irritation eyes, skin, nose; lacrimation (discharge of tears); headache; chest tightness; skin burns, rash; cutaneous hypersensitivity
LD50 orl rat : 14000 mg/kg

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-10801
LC_Low orl rat : 7500 mg/kg
LD50 orl mus : 4360 mg/kg

Chemical: *acetone* CAS No.: 67-64-1
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 750 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system
Symptoms: irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: [PAC] Yes, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥0,1%, Article 57-1+2 (Labelling&SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-29367
LD50 orl rat : 5800 mg/kg
LC50 ihl rat : 50,1 mg/L/8H

100 mL Spray reagent acc. to Dragendorff-Munier

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-10801
LC_Low orl rat : 7500 mg/kg
LD50 orl mus : 4360 mg/kg

Chemical: *bismuth(III) nitrate, basic* CAS No.: 10361-46-3
TSCA Inventory: listed (CAS 1304-85-4)
LC50 fish : > 500 mg/L

Chemical: *potassium iodide* CAS No.: 7681-11-0
TSCA Inventory: listed
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 2779 mg/kg

50 mL Potassium hexacyanoferrate(III) solution

Chemical: *potassium hexacyanoferrate(III)* CAS No.: 13746-66-2
TSCA Inventory: listed (CAS 25869-98-1)
LC_Low orl rat : 1600 mg/L
LD50 orl mus : 2970 mg/kg

100 mL Toluene/Diethyl ether (55:35)

Chemical: *diethyl ether, ether* CAS No.: 60-29-7
TSCA Inventory: listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system
Symptoms: irritation eyes, skin, upper respiratory system; dizziness, drowsiness, headache, excited, narcosis; nausea, vomiting
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: Article 57-1+2 (Labelling&SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-27690
LD50 $_{orl\ rat}$: 1215 mg/kg
LC_Low $_{orl\ hmn}$: 260 mg/kg
LC50 $_{ihl\ rat}$: > 20 mg/L
LC50 $_{ihl\ rbt}$: 73000 ppm/2h
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
TRGS 905 (DE): R $_{F}$ 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_Low $_{ihl\ hmn}$: 50 mg/L
LC50 $_{ihl\ rat}$: 25,7-30 mg/L/4H

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

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 ≥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 $_{ihl\ gpg}$: 21,900 mg/L
LC_Low $_{orl\ hmn}$: 1400 mg/kg
LC50 $_{ihl\ mus}$: 123,4 mg/L/4H
LC50 $_{ihl\ rat}$: 115,9-133,8 mg/L/4H
LD50 $_{orl\ mus}$: 3450 mg/kg

TRGS 905 (DE): K5, M5, R $_{F}$ C

8 ml TLC reference solution quinine F10

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 : 21,900 mg/L
LC_Low orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

Chemical: *Quinine* CAS No.: 130-95-0
LD50 orl rat : 455,8 mg/kg
LD50 orl mus : 70-95 mg/kg

8 ml TLC reference solution caffeine F10
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 : 21,900 mg/L
LC_Low orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

8 ml DC Vergleichslösung Paracetamol F10
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 : 21,900 mg/L
LC_Low orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

50 mL Iron(III) chloride solution

Chemical: *iron(III) chloride* CAS No.: 7705-08-0
TSCA Inventory: listed
Japan ISHL: listed >1,0%/>1,0%
LD50 orl rat : 450 mg/kg

100 mL 2-Propanol
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 ≥1,0%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA:
Korea Exist.Chem.Inventory: KE-29363
LD50 orl rat : 5045 mg/kg
LC_Low orl hmn : 3570 mg/kg
LC50 ihl rat : 25 mg/L/4H

TRGS 905 (DE): R F C

11.2 Other hazards

Possible endocrine disrupting effects
no data available

Other information
no additional data available

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

25 mL Diethylamine
Chemical: *diethylamine* CAS No.: 109-89-7
Avoid contact of substance/mixture to environment.
Water hazard class (DE): 1 WGK No.: 0248
Storage class (VCI): 3

30 mL Acetic acid ethyl ester
Chemical: *ethyl acetate* CAS No.: 141-78-6
PNEC (fresh water) : 0.26 mg/L
PNEC = Predicted No Effected Concentration
LC50 pimephales promelas/96h : 230-328 mg/L
LC50 leuciscus idus/96h : LC0: 100-1000 mg/L
LC50 fish/96h : 455 mg/L
EC50 daphnia/48h : 8800 mg/L
IC50 scenedesmus quadricauda/72h : EC50/48h: 3300 mg/L
Water hazard class (DE): 1 WGK No.: 0095
Dispersion coefficient (o/w) : 0,73
Storage class (VCI): 3

25 mL Ammonia solution 12.5%
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 Effected 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

100 mL Caffeine spray reagent

Chemical: *iron(III) chloride* CAS No.: 7705-08-0
LC50 fish/96h : 23 24h mg/L
EC50 daphnia/48h : 29.7 mg/L
Water hazard class (DE): 1 WGK No.: 0515
Storage class (VCI): 8 B

Chemical: *iodine* CAS No.: 7553-56-2
Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
Water hazard class (DE): 2 WGK No.: 0492
Storage class (VCI): 12-13

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
Water hazard class (DE): - WGK No.: (5094)
Dispersion coefficient (o/w) : -0,76
Storage class (VCI): 12-13

Chemical: *acetone* CAS No.: 67-64-1
PNEC (fresh water) : 10.6 mg/L
PNEC = Predicted No Effected Concentration
LC50 daphnia magna/48h : [48h] 8.8 g/L
LC50 fish/96h : [4d] 5540 mg/L
EC50 daphnia/48h : 2212 mg/L
IC50 scenedesmus quadricauda/72h : IC5: 7500 mg/L
EC10 pseudomonas putita/16h : [30 min] 61,15 g/L
Water hazard class (DE): 1 WGK No.: 0006
Dispersion coefficient (o/w) : -0,24
Storage class (VCI): 3

100 mL Spray reagent acc. to Dragendorff-Munier

Chemical: *L(+)-tartaric acid* CAS No.: 87-69-4
Water hazard class (DE): - WGK No.: (5094)
Dispersion coefficient (o/w) : -0,76
Storage class (VCI): 12-13

Chemical: *bismuth(III) nitrate, basic* CAS No.: 10361-46-3
Water hazard class (DE): 2
Storage class (VCI): 12-13

Chemical: *potassium iodide* CAS No.: 7681-11-0
LC50 fish/96h : 2190 mg/L
Water hazard class (DE): 1
Dispersion coefficient (o/w) : 0,04
Storage class (VCI): 12-13

50 mL Potassium hexacyanoferrate(III) solution

Chemical: *potassium hexacyanoferrate(III)* CAS No.: 13746-66-2
Water hazard class (DE): 2 WGK No.: 490
Storage class (VCI): 12-13

100 mL Toluene/Diethyl ether (55:35)

Chemical: *diethyl ether, ether* CAS No.: 60-29-7
LC50 pimephales promelas/96h : 2560 mg/L
LC50 leuciscus idus/96h : 2840 mg/L
EC50 daphnia/48h : >100 mg/L
Water hazard class (DE): 1 WGK No.: 0080
Dispersion coefficient (o/w) : 1,05
Storage class (VCI): 3

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 (o/w) : 2,73
Storage class (VCI): 3

100 mL Ethanol

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 (o/w) : -0,31
Storage class (VCI): 3

8 ml TLC reference solution quinine F10

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 (o/w) : -0,31
Storage class (VCI): 3

Chemical: *Quinine* CAS No.: 130-95-0

8 ml TLC reference solution caffeine F10

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 (o/w) : -0,31
Storage class (VCI): 3

8 ml DC Vergleichslösung Paracetamol F10

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 (o/w) : -0,31
Storage class (VCI): 3

50 mL Iron(III) chloride solution

Chemical: *iron(III) chloride* CAS No.: 7705-08-0
LC50 $_{fish/96h}$: 23 $_{24h}$ mg/L
EC50 $_{daphnia/48h}$: 29.7 mg/L
Water hazard class (DE): 1 WGK No.: 0515
Storage class (VCI): 8 B

100 mL 2-Propanol

Chemical: *2-propanol* CAS No.: 67-63-0
PNEC $_{(fresh\ water)}$: 140.9 mg/L
PNEC = Predicted No Effected Concentration
LC50 $_{fish/96h}$: 1400 mg/L
EC50 $_{daphnia/48h}$: 13.3 g/L
IC50 $_{scenedesmus\ quadricauda/72h}$: >1000 mg/L
EC10 $_{pseudomonas\ putita/16h}$: EC5: 1050 mg/L
Water hazard class (DE): 1 WGK No.: 0135
Dispersion coefficient $_{(o/w)}$: 0,05
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

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

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06). 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 ADR
Classification code: M11 Tunnel restriction code: E
Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation
Air transport ICAO
PAX: 960 max. weight PAX: 10 KG
CAO: 960 max. weight CAO: 10 KG
Maritime transport IMDG
EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**

14.1 UN number: 1154 14.2 UN proper shipping name: Diethylamine
14.3 Class: 3 Additionally class: **8 _ 14.4 Packing group: II**
Road transport ADR
Classification code: FC
Limited Quantity: 1 L Tunnel restriction code: E

Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ 4
Excepted Quantity: E 2
PAX: 352 max. weight PAX: 1 L
CAO: 363 max. weight CAO: 5 L
Maritime transport IMDG
EmS: F-E, S-C Storage category: E

14.1 UN number: 1993
14.2 UN proper shipping name: Flammable liquid, n.o.s. (2-propanol, acetone, diethyl ether, ether, ethanol, ethyl acetate, toluene mixture

14.3 Class: 3 **14.4 Packing group: II**
Road transport ADR
Classification code: F1
Limited Quantity: 1 L Tunnel restriction code: E
Excepted Quantity: E 2 Special instructions: 640C
Air transport ICAO
Limited Quantity: LQ 4
Excepted Quantity: E 2
PAX: 353 max. weight PAX: 5 L
CAO: 364 max. weight CAO: 60 L
Maritime transport IMDG
EmS: F-E, S-E Storage category: B

14.1 UN number: 3266 **14.2 UN proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (ammonia solution)**
14.3 Class: 8 **14.4 Packing group: II**
Road transport ADR
Classification code: C5
Limited Quantity: 1 L Tunnel restriction code: E
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ22
Excepted Quantity: E 2
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L
Maritime transport IMDG
EmS: F-A, S-B 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 Carriage in bulk by sea in accordance with IMO instruments
Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Chemicals Prohibition Ordinance - (DE: ChemVerbotsV), aktualisiert Jan 2017
Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
TRGS 220, National aspects when preparing safety data sheets, Jan 2017
TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011
BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
TRGS 500, Protective measures, Mai 2008
TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015
Chapter 4, Measures when storing hazardous substances up to 50 kg (small quantity regulation)
Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016

MN leaflet/instructions for use, also at www.mn-net.com
If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts

SECTION 16: Other information

16.1 Changes compared to the last version

in preparation

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
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.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

16.2.2 List of relevant P phrases

P201	Obtain special instructions before use.
P260sh	Do not breathe dust/vapours.
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.
P331	Do NOT induce vomiting.

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 Sources of key data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021
Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres
Directive 2004/37/EC on the protection of workers from the risk of carcinogens or mutagens at workSUVA .CH, limit values in the air at work 2009, revised on 01/2009
Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)
Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG
Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)
Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)
Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)
TRGS 905, German rules of technology for carcinogenic and mutagenic substances, as of March 18, 2016
Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)

Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

revisions/updates

Reason for revision: *2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary*
2014-04 adjustment according Regulation 487/2013/EU
2016-03 adjustment according Regulation 1221/2015/EU
2017–08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU
2017-11 adjustment according the ECHA registration dossier
2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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16.6 Legend / Abbreviations

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

PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACh:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
RIP:	REACH Implementations Projects
scu:	sub cutan
SDS:	safety data sheet
Sens:	sensitisation
STEL:	short term exposure limit
STOT:	Specific Target Organ Toxicity
SVHC:	Substance of Very High Concern
t/a:	tons per year
TCCA:	Toxic Chemicals Control Act (S. Korea)
Tox:	toxic
TSCA:	The Toxic Substances Control Act (US)
TWA:	time weighted average
TRGS:	technical regulations (DE)
vPvB:	very persistent, very bioaccumulating substance

16.7 Training advice

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