

Material Safety Data Sheet

according to Directive 1907/2006/EC (REACH)

Filtration · Rapid Tests · Water Analysis · Chromatography · Bioanalysis
 Filtration · Schnellteste · Wasseranalytik · Chromatographie · Bioanalytik

Printing date: 04.07.2011

Date of issue: 03.06.2011

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1 Identification of the Substance/Mixture and of the Company

1.1 Identification/Product Name

REF	814200
Product name	TLC Micro Set F 1
	1 x 50 mL Acetic acid 50%
	1 x 100 mL Acetone
	3 x 8 mL Amino acid test mixture
	1 x 100 mL Ammonia solution 25%
	4 x 8 mL Cation test mixture (heavy metals)
	1 x 50 mL Hydrochloric acid 18%
	1 x 100 mL n-Butanol
	1 x 100 mL Ninhydrin spray reagent
	1 x 100 mL Rubeanic acid spray reagent

1.2 Use of the Substance/Mixture

Product for analytical use.
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0

1.3 Manufacturer

MACHEREY-NAGEL GmbH & Co. KG
 Neumann-Neander-Strasse 6-8, D-52355 Dueren, GERMANY
 Tel.: +49 (0)2421 969 0 e-mail: msds@mn-net.com

1.4 Emergency Telephone

Outside Germany (DE):
 Call your regional Poisons Information Service or call local Life Saving Service.
 DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 (0)361 730 730

2 Hazard Identification

2.1 Hazard Symbols

Directive 1999/45/EC
 Symbols



F C
 R 11-34-66-67

R

GHS Directive 1272/2008/EC
 GHS Symbols



GHS02 GHS05 GHS07

Signalword

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1B

2.2 Hazard Description

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.

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.

Information pertaining to particular Risks to the Environment

Avoid contact of chemical/mixture to environment.

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Other Hazards


Flammable properties. Vapour forms explosive mixtures with air.

3 Composition/Information on Ingredients


3.1 Description of the Components

50 mL Acetic acid 50%

Directive 1999/45/EC

Symbols R 34

 C



GHS Directive 1272/2008/EC

GHS Symbols H314




Signalword GHS05
 DANGER

100 mL Acetone

Directive 1999/45/EC

Symbols R 11-36-66-67
 
 F Xi

GHS Directive 1272/2008/EC

GHS Symbols
 
 GHS02 GHS07

Signalword DANGER

8 mL Amino acid test mixture

Directive 1999/45/EC


Symbols -
 do not need labelling as hazardous

GHS Directive 1272/2008/EC


GHS Symbols do not need labelling as hazardous
 Signalword do not need labelling as hazardous

100 mL Ammonia solution 25%

Directive 1999/45/EC

Symbols R 34

 C

GHS Directive 1272/2008/EC

GHS Symbols H314


GHS05 GHS07

Signalword DANGER

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8 mL Cation test mixture (heavy metals)

Directive 1999/45/EC

Symbols do not need labelling as hazardous

GHS Directive 1272/2008/EC

GHS Symbols do not need labelling as hazardous
 Signalword do not need labelling as hazardous

50 mL Hydrochloric acid 18%

Directive 1999/45/EC

Symbols R 36/37/38



Xi

GHS Directive 1272/2008/EC

GHS Symbols



GHS07

Signalword WARNING

100 mL n-Butanol

Directive 1999/45/EC

Symbols R 37/38-41-67



Xi

GHS Directive 1272/2008/EC

GHS Symbols

H318



GHS02

GHS05

GHS07

Signalword DANGER

100 mL Ninhydrin spray reagent

Directive 1999/45/EC

Symbols R 11



F

GHS Directive 1272/2008/EC

GHS Symbols



GHS02

Signalword DANGER

100 mL Rubeanic acid spray reagent

Directive 1999/45/EC

Symbols R 11



F

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 GHS Directive 1272/2008/EC
 GHS Symbols


GHS02

Signalword

DANGER

3.2 Hazardous Components

50 mL Acetic acid 50%

Chemical:	<i>acetic acid</i>	CAS No.:	64-19-7
Concentration:	25 - 50 %		
Formula:	C ₂ H ₄ O ₂		
EC No.:	200-580-7	Indice No.:	607-002-00-6
RTECS:	AF1225000	MFCD:	MFCD00036152
TSCA listed:	listed		
acc. 1999/45/EC:	R 34	acc. CLP (GHS):	H314

100 mL Acetone

Chemical:	<i>acetone</i>	CAS No.:	67-64-1
Concentration:	10 - 100 %		
Formula:	C ₃ H ₆ O		
EC No.:	200-662-2	Indice No.:	606-001-00-8
RTECS:	AL3150000	MFCD:	00008765
TSCA listed:	listed		
acc. 1999/45/EC:	R 11-36-66-67	acc. CLP (GHS):	H225, H319, H336, EUH066

8 mL Amino acid test mixture

Chemical:	<i>test chemical(s) (ppm)</i>	CAS No.:	-
Concentration:	0,1 - 1 %		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

100 mL Ammonia solution 25%

Chemical:	<i>ammonia solution</i>	CAS No.:	1336-21-6
Concentration:	10 - 25 %		
Formula:	NH ₃ ·H ₂ O		
EC No.:	215-647-6	Indice No.:	007-001-01-2
RTECS:	BQ9625000	MFCD:	MFCD00011418
TSCA listed:	listed		
acc. 1999/45/EC:	R 34	acc. CLP (GHS):	H314, H335, H400

8 mL Cation test mixture (heavy metals)

Chemical:	<i>test chemical(s) (ppm)</i>	CAS No.:	-
Concentration:	0,1 - 1 %		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

50 mL Hydrochloric acid 18%

Chemical:	<i>hydrochloric acid</i>	CAS No.:	7647-01-0
Concentration:	10 - 25 %		
Formula:	HCl·H ₂ O		
EC No.:	231-595-7	Indice No.:	017-002-00-2
TSCA listed:	listed		
acc. 1999/45/EC:	R 36/37/38	acc. CLP (GHS):	H315, H319, H335

100 mL n-Butanol

Chemical:	<i>1-butanol</i>	CAS No.:	71-36-3
Concentration:	20 - 100 %		
Formula:	C ₄ H ₁₀ O		
EC No.:	200-751-8	Indice No.:	603-004-00-6
RTECS:	EO1400000	MFCD:	00002964
TSCA listed:	listed		
acc. 1999/45/EC:	R 10-22-37/38-41-67	acc. CLP (GHS):	H226, H302, H315, H318, H335, H336

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100 mL Ninhydrin spray reagent

Chemical:	<i>ninhydrin</i>	CAS No.:	485-47-2
Concentration:	< 1,00 %		
Formula:	C ₉ H ₆ O ₄		
EC No.:	207-618-1		
RTECS:	NK5425000	MFCD:	00003791
TSCA listed:	listed		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
Concentration:	90 - 98 %		
Formula:	C ₂ H ₆ O		
EC No.:	200-578-6	Indice No.:	603-002-00-5
RTECS:	KQ6300000	MFCD:	MFCD00003568
TSCA listed:	listed		
acc. 1999/45/EC:	R 11	acc. CLP (GHS):	H225

100 mL Rubeanic acid spray reagent

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
Concentration:	90 - 98 %		
Formula:	C ₂ H ₆ O		
EC No.:	200-578-6	Indice No.:	603-002-00-5
RTECS:	KQ6300000	MFCD:	MFCD00003568
TSCA listed:	listed		
acc. 1999/45/EC:	R 11	acc. CLP (GHS):	H225

Chemical:	<i>rubeanic acid</i>	CAS No.:	79-40-3
Concentration:	< 1,00 %		
Formula:	C ₂ H ₄ N ₂ S ₂		
EC No.:	201-203-9		
RTECS:	RP1575000	MFCD:	00004941
TSCA listed:	listed		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

3.3 Remarks

List of R and H phrases: see chapter 16

4 First Aid Measures**4.1 General Information**

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 Further Medical Treatment/Attention

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 DISTRESS ensure that the patient inhales oxygen.

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5 Fire-fighting Measures

5.1 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.

5.2 Hazards, Combustion Products/Gases

Formation of hazardous and caustic vapour-air mixtures possible.

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

5.3 Special Protective Equipment required

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

Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

6 Accidental Release Measures

6.1 Personal Precautions

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 Methods of Cleaning-up

Bind any escaping liquid with universal binder. 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.

7 Handling and Storage

7.1 Handling

In accordance with the testing instructions, that comes with the product.

7.2 Storage

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (German chemical industry): see chapter 12.1

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.

8 Exposure Controls/Personal Protection

8.1 Exposure Limit Values

50 mL Acetic acid 50%

Chemical: *acetic acid*

CAS No.: 64-19-7

EU value: 10 ppm / 25 mg/m³

TRGS 900 (DE): 10 ppm / 25 mg/m³

Short-term exposure factor: 2(I)

SUVA(CH) MAK value: 10 ppm / 25 mg/m³

100 mL Acetone

Chemical: *acetone*

CAS No.: 67-64-1

EU value: (500 ppm / 1200) mg/m³

TRGS 900 (DE): 500 ppm / 1200 mg/m³

Short-term exposure factor: 4

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

OSHA PEL: 1000 ppm

8 mL Amino acid test mixture

Chemical: *test chemical(s) (ppm)*

CAS No.: -

100 mL Ammonia solution 25%

Chemical: *ammonia solution*

CAS No.: 1336-21-6

EU value: 20 ppm / 14 mg/m³

TRGS 900 (DE): 20 ppm / 14 mg/m³

Short-term exposure factor: 2 (I)

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SUVA(CH) MAK value: 20 ppm / 14 mg/m³

8 mL Cation test mixture (heavy metals)

Chemical: *test chemical(s) (ppm)*

CAS No.: -

50 mL Hydrochloric acid 18%

Chemical: *hydrochloric acid*

CAS No.: 7647-01-0

EU value: (2 ppm / 3) mg/m³

TRGS 900 (DE): 2 ppm / 3 mg/m³

Short-term exposure factor: 2 (I)

SUVA(CH) MAK value: 2 ppm / 3* mg/m³

100 mL n-Butanol

Chemical: *1-butanol*

CAS No.: 71-36-3

TRGS 900 (DE): 100 ppm / 310 mg/m³

Short-term exposure factor: 1 (I)

SUVA(CH) MAK value: 50 ppm / 150 mg/m³

TRGS 903 (DE): U/d 2; U/b 10_{Kreatinin} mg/g

TRGS 905 (DE): R_F C

NIOSH REL: 150 mg/m³

OSHA PEL: 300 mg/m³

100 mL Ninhydrin spray reagent

Chemical: *ninhydrin*

CAS No.: 485-47-2

Chemical: *ethanol*

CAS No.: 64-17-5

TRGS 900 (DE): 500 ppm / 960 mg/m³

Short-term exposure factor: 2 (II)

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

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

OSHA PEL: 1000 ppm

100 mL Rubeanic acid spray reagent

Chemical: *ethanol*

CAS No.: 64-17-5

TRGS 900 (DE): 500 ppm / 960 mg/m³

Short-term exposure factor: 2 (II)

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

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

OSHA PEL: 1000 ppm

Chemical: *rubeanic acid*

CAS No.: 79-40-3

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

Only if additional recommendations in test instruction or packing insert.

8.2.2 Hand Protection

Yes, gloves according EN 374, consist of natural latex, butylrubber, viton or nitril (f.ex. Neopren® or Camatril from KCI). Use for short times all chemical resistant gloves (limited).

8.2.3 Eye Protection

Yes, safety glasses according EN 166 or face protection.

8.2.4 Skin Protection

Recommended, to avoid clothing damage, 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.

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9 Physical and Chemical Properties

9.1 General Information

50 mL Acetic acid 50%		
Color: colourless	Odor: acetic	Appearance: liquid
100 mL Acetone		
Color: colourless	Odor: like acetone	Appearance: liquid
8 mL Amino acid test mixture		
Color: colourless	Odor: odorless	Appearance: liquid
100 mL Ammonia solution 25%		
Color: colourless	Odor: aminic	Appearance: liquid
8 mL Cation test mixture (heavy metals)		
Color: colored	Odor: odorless	Appearance: liquid
50 mL Hydrochloric acid 18%		
Color: colourless	Odor: penetrative	Appearance: liquid
100 mL n-Butanol		
Color: colourless	Odor: fusty, mouldy	Appearance: liquid
100 mL Ninhydrin spray reagent		
Color: red	Odor: alcoholic	Appearance: liquid
100 mL Rubeanic acid spray reagent		
Color: -	Odor: alcoholic	Appearance: liquid

9.2 Important Health, Safety and Environmental Information

9.2.1 Safety relevant Basis Data

<i>50 mL Acetic acid 50%</i>	
pH:	2-3
specific gravity:	1,06 g/cm ³
 <i>100 mL Acetone</i>	
pH:	5-6
specific gravity:	0,79 g/cm ³
flash point:	-20 °C
explosion limits:	2.5-13 Vol%
solubility in water:	0-100 %
melting point:	-95 °C
boiling point:	56 °C
vapour pressure (20°C):	233 hPa
flashing temperature:	540 °C
odor limit:	1-1600 mg/m ³
evaporation rate (ether=1):	2,1
rel. vapour density (air=1):	2,01
volatiles by volume:	555 g/m ³
 <i>8 mL Amino acid test mixture</i>	
specific gravity:	no data available
 <i>100 mL Ammonia solution 25%</i>	
pH:	> 11,5
specific gravity:	0,88 g/cm ³
explosion limits:	15-28 Vol%
solubility in water:	0-100 %
melting point:	< -57.5 °C
boiling point:	37.7 (25%) °C
vapour pressure (20°C):	> 500 hPa
odor limit:	1-4 mg/m ³
 <i>8 mL Cation test mixture (heavy metals)</i>	
specific gravity:	no data available
 <i>50 mL Hydrochloric acid 18%</i>	
pH:	0-1
specific gravity:	1,09 g/cm ³

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100 mL n-Butanol

pH:	7
specific gravity:	0,81 g/cm ³
flash point:	34 °C
explosion limits:	1.4-11 Vol%
solubility in water:	0-8 %
melting point:	-89 °C
boiling point:	117 °C
vapour pressure (20°C):	6.3 hPa
flashing temperature:	325 °C
odor limit:	0.36-150 mg/m ³
evaporation rate (ether=1):	33
rel. vapour density (air=1):	2,55
volatiles by volume:	20 g/m ³

100 mL Ninhydrin spray reagent

pH:	7
specific gravity:	0,79-0,86 g/cm ³
flash point:	12-14 °C
explosion limits:	3.2-15 Vol%
solubility in water:	0-100 %
melting point:	-114 °C
boiling point:	78 °C
vapour pressure (20°C):	59 hPa
flashing temperature:	425 °C
odor limit:	19-93 mg/m ³
rel. vapour density (air=1):	1,59
volatiles by volume:	112 g/m ³

100 mL Rubenic acid spray reagent

pH:	7
specific gravity:	0,79-0,86 g/cm ³
flash point:	12-14 °C
explosion limits:	3.2-15 Vol%
solubility in water:	0-100 %
melting point:	-114 °C
boiling point:	78 °C
vapour pressure (20°C):	59 hPa
flashing temperature:	425 °C
odor limit:	19-93 mg/m ³
rel. vapour density (air=1):	1,59
volatiles by volume:	112 g/m ³

9.2.2 Relevant Properties of Substance Group

9.3 Additional Information

10 Stability and Reactivity

10.1 Conditions to avoid

If on label. When indicated in packing insert.

10.2 Materials to avoid

Avoid contact with strong acids or alkalines.

10.3 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.

11 Toxicological Information

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

50 mL Acetic acid 50%

Chemical:	<i>acetic acid</i>
LD50 _{orl rat} :	3310 mg/kg
LC _{Loworl rat} :	16000 _{4h} mg/m ³
LC _{Loworl rbt} :	1200 mg/kg
LC50 _{ihl mus} :	5620 ppm/1h
LD50 _{drum rbt} :	1060 mg/kg

CAS No.: 64-19-7

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100 mL Acetone

Chemical:	<i>acetone</i>	CAS No.:	67-64-1
LD50 _{orl rat} :	5800 mg/kg		
LC _{Lowihl mus} :	110 _{1h} mg/m ³		
LC50 _{ihl rat} :	50.1 _{8h} g/m ³		
LD50 _{drm rbt} :	20 g/kg		

8 mL Amino acid test mixture

Chemical:	<i>test chemical(s) (ppm)</i>	CAS No.:	-
LD50 _{orl rat} :	no data available		

100 mL Ammonia solution 25%

Chemical:	<i>ammonia solution</i>	CAS No.:	1336-21-6
LD50 _{orl rat} :	350 mg/kg		
LC _{Lowihl hmn} :	5000 mg/m ³		
LC50 _{ihl rat} :	2000 _{4h} ppm		
LD50 _{drm rbt} :	5000 ppm/5min		

8 mL Cation test mixture (heavy metals)

Chemical:	<i>test chemical(s) (ppm)</i>	CAS No.:	-
LD50 _{orl rat} :	no data available		

50 mL Hydrochloric acid 18%

Chemical:	<i>hydrochloric acid</i>	CAS No.:	7647-01-0
LD50 _{orl rat} :	900 mg/kg		

100 mL n-Butanol

Chemical:	<i>1-butanol</i>	CAS No.:	71-36-3
LD50 _{orl rat} :	790 mg/kg		
LD50 _{drm rbt} :	3400 mg/kg		

100 mL Ninhydrin spray reagent

Chemical:	<i>ninhydrin</i>	CAS No.:	485-47-2
LD50 _{orl rat} :	600 mg/kg		
LC _{Loworl rat} :	250 mg/kg		

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
LD50 _{orl rat} :	6200 mg/kg		
LC _{Lowihl gpg} :	21.9 g/m ³		
LC _{Loworl hmn} :	1400 mg/kg		
LC50 _{ihl mouse} :	39 _{4h} g/m ³		
LC50 _{ihl rat} :	20 _{10h} g/m ³		
LD50 _{drm rbt} :	20 g/kg		
LD50 _{oral mouse} :	3450 mg/kg		

100 mL Rubanic acid spray reagent

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
LD50 _{orl rat} :	6200 mg/kg		
LC _{Lowihl gpg} :	21.9 g/m ³		
LC _{Loworl hmn} :	1400 mg/kg		
LC50 _{ihl mouse} :	39 _{4h} g/m ³		
LC50 _{ihl rat} :	20 _{10h} g/m ³		
LD50 _{drm rbt} :	20 g/kg		
LD50 _{oral mouse} :	3450 mg/kg		

Chemical:	<i>rubanic acid</i>	CAS No.:	79-40-3
LD50 _{orl rat} :	no data available		

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12 Ecological Information

12.1 Ecotoxicity

Following information is valid for pure chemicals.

50 mL Acetic acid 50%

 Chemical: *acetic acid* CAS No.: 64-19-7
 WGK (DE): 1 WGK No.: 0093
 storage class (VCI): 3 A

100 mL Acetone

 Chemical: *acetone* CAS No.: 67-64-1
 WGK (DE): 1 WGK No.: 0006
 storage class (VCI): 3 A

8 mL Amino acid test mixture

 Chemical: *test chemical(s) (ppm)* CAS No.: -
 storage class (VCI): 12

100 mL Ammonia solution 25%

 Chemical: *ammonia solution* CAS No.: 1336-21-6
 Bio Toxicity: 3/5.8/5.3
 WGK (DE): 2 WGK No.: 0211
 storage class (VCI): 8 B

8 mL Cation test mixture (heavy metals)

 Chemical: *test chemical(s) (ppm)* CAS No.: -
 storage class (VCI): 12

50 mL Hydrochloric acid 18%

 Chemical: *hydrochloric acid* CAS No.: 7647-01-0
 WGK (DE): 1 WGK No.: 0238
 storage class (VCI): 8 B

100 mL n-Butanol

 Chemical: *1-butanol* CAS No.: 71-36-3
 WGK (DE): 1 WGK No.: 0039
 storage class (VCI): 3 A

100 mL Ninhydrin spray reagent

 Chemical: *ninhydrin* CAS No.: 485-47-2
 WGK (DE): 2
 storage class (VCI): 12

 Chemical: *ethanol* CAS No.: 64-17-5
 LC50_{daphnia magna/48h} >100 mg/L
 EC50_{daphnia/48h} : 2/9.3/>100 mg/L
 WGK (DE): 1 WGK No.: 0096
 storage class (VCI): 3 A

100 mL Rubenic acid spray reagent

 Chemical: *ethanol* CAS No.: 64-17-5
 LC50_{daphnia magna/48h} >100 mg/L
 EC50_{daphnia/48h} : 2/9.3/>100 mg/L
 WGK (DE): 1 WGK No.: 0096
 storage class (VCI): 3 A

 Chemical: *rubenic acid* CAS No.: 79-40-3
 WGK (DE): 2
 storage class (VCI): 12

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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).
 Normally it is possible to empty small amounts (diluted!) into drains.
 Dispose of contents/container to regulated waste treatment.

14 Transport Information

Proper shipping name: Chemical Kit

UN No.: 3316 Packing group: II

Class: 9

Road transport

Classification code: M11 Tunnel restriction code: E

Limited Quantity: LQ 0 (acc. ADR 3.3.1/251: as LQ until max. 10 kg, see LQ in alternative transport name)

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

Alternative Transport Labelling follows:

Proper shipping name: **Flammable liquid, n.o.s. (ethanol, acetone solution)**

UN No.: 1993 Packing group: II

Class: 3

Road transport

Classification code: F1 Tunnel restriction code: E

Limited Quantity: LQ 4 Tunnel restriction code: E

Excepted Quantity: E 2 Special instructions: 640C

Air transport

PAX: 353 max. weight PAX: 5 L

CAO: 364 max. weight CAO: 60 L

Maritime transport

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

Proper shipping name: **Corrosive liquid, acidic, inorganic, n.o.s. (rubeanic acid, hydrochloric acid solution)**

UN No.: 3264 Packing group: II

Class: 8

Road transport

Classification code: C1 Tunnel restriction code: E

Limited Quantity: LQ 22 Tunnel restriction code: E

Excepted Quantity: E 2

Air transport

PAX: 851 max. weight PAX: 1 L

CAO: 855 max. weight CAO: 30 L

Maritime transport

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

Maritime pollutant (5.2.1.6): P* (only if P >5 L/kg, or PP >0.5 L/kg per inner package)

Proper shipping name: **Corrosive liquid, basic, inorganic, n.o.s. (ammonia solution)**

UN No.: 3266 Packing group: II

Class: 8

Road transport

Classification code: C5 Tunnel restriction code: E

Limited Quantity: LQ22 Tunnel restriction code: E

Excepted Quantity: E 2

Air transport

PAX: 851 max. weight PAX: 1 L

CAO: 855 max. weight CAO: 30 L

Maritime transport

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

Maritime pollutant (5.2.1.6): P* (only if P >5 L/kg, or PP >0.5 L/kg per inner package)

15 Regulatory Information

15.1 International Regulations

According 1999/45/EC small amounts of harmful and highly flammable preparations/mixtures have partly/completely exemption from labelling (no symbols F, O, Xn, Xi, N and no R and S phrases are necessary) until **25-125 mL/g**.

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

Harmful chemicals/mixtures with signalword: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases until **125 mL** or **125 g**.

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50 mL Acetic acid 50%

Directive 1999/45/EC
Symbols:



C
R 34
Causes burns.

S 23-26-45

Do not breathe vapour. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

GHS Directive 1272/2008/EC
GHS Symbols:



GHS05

Signalword: DANGER

H314

Causes severe skin burns and eye damage.

P260D, P280sh, P301+330+331, P303+361+353, P304+340, P305+351+338

Do not breathe vapours. Wear protective gloves/eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

100 mL Acetone

Directive 1999/45/EC
Symbols:



F Xi

R 11-36-66-67

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

S 16-26-9

Keep away from sources of ignition — No smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Keep container in a well-ventilated place.

GHS Directive 1272/2008/EC
GHS Symbols:



GHS02

GHS07

Signalword: DANGER

8 mL Amino acid test mixture

Directive 1999/45/EC
Symbols:

-
-

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GHS Directive 1272/2008/EC

GHS Symbols:
do not need labelling as hazardous
Signalword: -

100 mL Ammonia solution 25%

Directive 1999/45/EC

Symbols:



C
R 34
Causes burns.

S 26-36/37/39-45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

GHS Directive 1272/2008/EC

GHS Symbols:



GHS05 GHS07

Signalword: DANGER

H314

Causes severe skin burns and eye damage.

P260D, P280sh, P301+330+331, P303+361+353, P304+340, P305+351+338

Do not breathe vapours. Wear protective gloves/eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

8 mL Cation test mixture (heavy metals)

Directive 1999/45/EC

Symbols:

-

-

GHS Directive 1272/2008/EC

GHS Symbols:
do not need labelling as hazardous
Signalword: -

50 mL Hydrochloric acid 18%

Directive 1999/45/EC

Symbols:



Xi
R 36/37/38
Irritating to eyes, respiratory system and skin.

S 26-45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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GHS Directive 1272/2008/EC

GHS Symbols:



GHS07

Signalword: WARNING

100 mL n-Butanol

Directive 1999/45/EC

Symbols:



Xi

R 37/38-41-67

Irritating to respiratory system and skin. Risk of serious damage to eyes. Vapours may cause drowsiness and dizziness.

S 13-26-37/39-7/9

Keep away from food, drink and animal feedingstuffs. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. Keep container tightly closed in a well-ventilated place.

GHS Directive 1272/2008/EC

GHS Symbols:



GHS02



GHS05



GHS07

Signalword: 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 or doctor/physician.

100 mL Ninhydrin spray reagent

Directive 1999/45/EC

Symbols:



F

R 11

Highly flammable.

S 16-7

Keep away from sources of ignition — No smoking. Keep container tightly closed.

GHS Directive 1272/2008/EC

GHS Symbols:



GHS02

Signalword: DANGER

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100 mL Rubenic acid spray reagent

Directive 1999/45/EC

Symbols:



F

R 11

Highly flammable.

S 16-7

Keep away from sources of ignition — No smoking. Keep container tightly closed.

GHS Directive 1272/2008/EC

GHS Symbols:



GHS02

Signalword: DANGER

15.2 National Regulations

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on May 2008
 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 December 2009
 Announcement BekGS 220 (DE), Safety Data Sheet, September 2007 updated May 2009

16 Other Information

16.1 List of R and H phrases

16.1.1 List of relevant R phrases

R10	Flammable.
R11	Highly flammable.
R22	Harmful if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

16.1.2 List of relevant H phrases

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
EUH066	Repeated exposure may cause skin dryness or cracking.

16.2 Training Advice

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. DE § 22 JArbSchG)!

Look about employee restrictions for pregnant women and nursing women (f.ex. DE §§ 4 und 5 MuSchRiv)!

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

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16.4 Further Information

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16.5 Sources of Key Data

TRGS 900, German engineering rules governing limits in air at work, updated May 2010

SUVA .CH, Limits in air at work 2009, revised on 01.2009

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

You find our current versions of MSDS in Internet:

<http://www.mn-net.com> link „Services“