

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 18.07.2018

Version number 13

Revision: 27.06.2018

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

· 1.1 Product identifier

· Product name: Cyanide-13

· Catalog number: 418875-13

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

· Application of the substance / the preparation: Reagent for water analysis

· 1.3 Details of the supplier of the safety data sheet

· Supplier:

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 231 94510-0
e-mail: sales@tintometer.de

Tintometer GmbH
Division AQUALYTIC®
Schleefstr. 12
44287 Dortmund
Made in Germany
www.aqualytic.de

phone: +49 231 94510-755
e-mail: sales@aqualytic.de

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@tintometer.com

· Informing department:

e-mail: sds@tintometer.de
Product Safety Department

· 1.4 Emergency telephone number:

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS02

· Signal word Warning

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Hazard statements

H226 Flammable liquid and vapour.

Precautionary statements

P210 Keep away from heat. - No smoking.

P261 Avoid breathing vapours.

P280 Wear protective gloves/protective clothing/eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P403+P235 Store in a well-ventilated place. Keep cool.

2.3 Other hazards

CAS 110-86-1: Danger by skin resorption.

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

SECTION 3: Composition/information on ingredients

3.2 Mixtures**Description:** Solvent mixture.**Dangerous components:**

CAS: 110-86-1	pyridine	25-35%
EINECS: 203-809-9	⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
Index No: 613-002-00-7		
Reg.nr.: 01-21199493105-40-XXXX		

Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures**General information** Instantly remove any clothing soiled by the product.**After inhalation** Supply fresh air; consult doctor in case of symptoms.**After skin contact** Instantly rinse with water.**After eye contact**

Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.

After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed:

absorption

irritations

after inhalation:

coughing

breathing difficulty

headache

mucous membrane irritation

after swallowing:

sickness

vomiting

gastric pain

diarrhoea

after absorption of large amounts:

narcotic conditions

cardiovascular disorders

cyanosis

4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Water, Carbon dioxide (CO₂), Foam, Fire-extinguishing powder
- **For safety reasons unsuitable extinguishing agents**
For this substance / mixture no limitations of extinguishing agents are given.
- **5.2 Special hazards arising from the substance or mixture**
combustible
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Nitrogen oxides (NOx)
acrolein
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Suppress (knock down) gases/vapours/mists wit a water spray jet.
Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Do not breathe vapors/spray.
Ensure adequate ventilation
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Prevent material from reaching sewage system, holes and cellars.
Damp down gases/fumes/haze with water spray jet.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**
Open and handle container with care.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Protect from heat.
Keep ignition sources away - Do not smoke.
Take action to prevent static discharges.
- **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store in cool location.

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- Store only in the original container.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed containers.
 - Protect from heat and direct sunlight.
 - Protect from the effects of light.
 - Protect from humidity and keep away from water.
 - This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Components with limit values that require monitoring at the workplace:

CAS: 56-81-5 glycerol

WEL (Great Britain)	Long-term value: 10 mg/m ³
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CAS: 110-86-1 pyridine

WEL (Great Britain)	Short-term value: 33 mg/m ³ , 10 ppm Long-term value: 16 mg/m ³ , 5 ppm
IOELV (European Union)	Long-term value: 15 mg/m ³ , 5 ppm
OEL (Sweden)	Short-term value: 10 mg/m ³ , 3 ppm Long-term value: 7 mg/m ³ , 2 ppm V

· Regulatory information

WEL (Great Britain): EH40/2011
 IOELV (European Union): 91/322/EEC, 2000/39/EC, 2006/15/EC
 OEL (Sweden): AFS2015:7

· DNELs

CAS: 110-86-1 pyridine

Oral	DNEL	0.07 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	0.42 mg/kg (Worker / acute / systemic effects)
		0.14 mg/kg (Worker / long-term / systemic effects)
		0.07 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	7.5 mg/m ³ (Worker / acute / systemic effects)
		2.5 mg/m ³ (Worker / long-term / systemic effects)
		0.6 mg/m ³ (Consumer / long-term / systemic effects)

· Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· PNECs

CAS: 110-86-1 pyridine

PNEC	2 mg/l (Sewage treatment plant)
	0.03 mg/l (Marine water)
	3 mg/l (Aquatic intermittent release)
	0.3 mg/l (Fresh water)
PNEC	0.46 mg/kg (Soil)
	0.32 mg/kg (Marine sediment)
	3.2 mg/kg (Fresh water sediment)

· **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

· Personal protective equipment

· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

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- **Recommended filter device for short term use:** Combination filter A-P2
- **Protection of hands:**
 - Protective gloves.
 - Preventive skin protection by use of skin-protecting agents is recommended.
 - After use of gloves apply skin-cleaning agents and skin cosmetics.
- **As protection from splashes gloves made of the following materials are suitable:**
 - Butyl rubber, BR
 - Recommended thickness of the material: ≥ 0.7 mm
 - Breakthrough time: > 240 min
 - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.
- **Limitation and supervision of exposure into the environment:**
 - Do not allow product to reach sewage system or water bodies.
 - Risk of explosion.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form / Physical state:	Fluid
Colour:	Colourless
· Odour:	Unpleasant
· Odour threshold:	CAS 110-83-1: 0,0001 - 20,1 ppm
· pH-value (10 g/l) at 20°C:	8.4
· Melting point/Freezing point:	Not determined
· Initial boiling point and boiling range:	Not determined
· Flash point:	$\sim 36^{\circ}\text{C}$ (c.c.)
· Flammability (solid, gas):	Flammable liquid and vapour.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/steam mixtures is possible.
· Flammability or explosive limits:	
Lower:	1.7 Vol % (CAS 110-86-1)
Upper:	11.3 Vol % (CAS 110-86-1)
· Oxidising properties:	none
· Vapour pressure:	Not determined.
· Density at 20°C:	1.17 g/cm ³
· Relative density:	Not determined.
· Vapour density:	Not determined.
· Evaporation rate:	Not determined.
· Solubility(ies):	
Water:	Fully miscible
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
Water:	0 %
· 9.2 Other information	No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** Fumes can combine with air to form an explosive mixture.
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 Reacts with strong acids and oxidizing agents.
 Reacts with halogenated compounds
 Reacts with peroxides
 Perchlorates
 Polymerisation
 ---> Explosive
- **10.4 Conditions to avoid** Heating.
- **10.5 Incompatible materials:**
 metals
 rubber
 various plastics
- **10.6 Hazardous decomposition products:**
 Inflammable gases/vapours
 In case of fire: see section 5.

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:

CAS: 110-86-1 pyridine

Oral	LD50	891 mg/kg (rat) (RTECS)
Dermal	LD50	1121 mg/kg (rabbit) (RTECS)
Inhalative	LC50	17.75 mg/l/4h (rat) (Vapour) (Registrant, ECHA)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 110-86-1 pyridine

Irritation of skin	OECD 404	(rabbit: slight irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 110-86-1 pyridine

Sensitisation	OECD 406	(guinea pig: negative)
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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 110-86-1 pyridine

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 473	(negative) (Mammalian Chromosomal Aberration Test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

- **Additional toxicological information:** CAS 110-86-1: Danger by skin resorption.

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- **Experience with humans:**
- CAS 110-86-1: Can cause liver damages.
- CAS 110-86-1: Can cause kidney damages.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

CAS: 110-86-1 pyridine

EC50	240 mg/l/48h (Daphnia magna) (ECOTOX)
LC50	4.6 mg/l/96h (rainbow trout) (ECOTOX)

- **Bacterial toxicity:**

CAS: 110-86-1 pyridine

EC5	3.5 mg/l (Entosiphon sulcatum) (72h)
	340 mg/l (Pseudomonas putida) (16h)

- **12.2 Persistence and degradability** No further relevant information available.

- **12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 110-86-1 pyridine

log Pow 0.65 (.) (experimental)

- **12.4 Mobility in soil** No further relevant information available.

- **12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

- **12.6 Other adverse effects** Avoid transfer into the environment.

- **Water hazard:**

Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

- **European waste catalogue**

16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
14 06 03*	other solvents and solvent mixtures

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**

· **ADR, IMDG, IATA** UN1993

- **14.2 UN proper shipping name**

· **ADR** 1993 FLAMMABLE LIQUID, N.O.S. (not viscous) (PYRIDINE)
· **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (PYRIDINE)

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<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	
	
<ul style="list-style-type: none"> · Class · Label 	3 (F1) Flammable liquids. 3
<ul style="list-style-type: none"> · IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Stowage Category 	Warning: Flammable liquids. 30 F-E, <u>S-E</u> A
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	3 D/E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

SECTION 15: Regulatory information

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

- Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

- Directive 2012/18/EU (SEVESO III):

- Named dangerous substances - ANNEX I None of the ingredients is listed.

- Seveso category P5c FLAMMABLE LIQUIDS

- Qualifying quantity (tonnes) for the application of lower-tier requirements 5.000 t

- Qualifying quantity (tonnes) for the application of upper-tier requirements 50.000 t

- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

- Information about limitation of use:

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC) .
Employment restrictions concerning young persons must be observed.

- VOC-value EC: 327.6 g/l

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
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* SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H225 Highly flammable liquid and vapour.
 H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H332 Harmful if inhaled.

- **Training hints** Provide adequate information, instruction and training for operators.

- **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

c.c.: closed cup

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

- **Sources**

Data arise from safety data sheets, reference works and literature.

ECOTOX Database

RTECS (Registry of Toxic Effects of Chemical Substances)