

Safety Data Sheet acc. to OSHA HCS (HazCom 2012)

Printing date 12/07/2022

Reviewed on 12/07/2022

1 Identification

- **Product identifier**
- **Trade name: Cyanide-13**
- **Catalogue number:** 418875-13, 418874-13, 2418874 (Set: Cyanide-13)
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

Carcinogenicity 2 H351 Suspected of causing cancer.



GHS07

Skin Irritation 2 H315 Causes skin irritation.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Warning

- **Hazard-determining components of labeling:**

pyridine

- **Hazard statements**

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H351 Suspected of causing cancer.

- **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.

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P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P403+P233

Store in a well-ventilated place. Keep container tightly closed.

Other hazards

CAS 110-86-1: Danger through skin absorption.

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

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:** Solvent mixture· **Composition and Information on Ingredients:**

CAS: 56-81-5 EINECS: 200-289-5 RTECS: MA 8050000	glycerol	70–80%
CAS: 110-86-1 EINECS: 203-809-9 Index number: 613-002-00-7 RTECS: UR 8400000	pyridine ⚠ Flammable Liquids 2, H225; ⚠ Carcinogenicity 2, H351; ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Dermal 4, H312; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315	20–30%

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

4 First-aid measures

· **Description of first aid measures**· **General information:** Immediately remove any clothing soiled by the product.· **After inhalation:** Supply fresh air; consult doctor in case of complaints.· **After skin contact:**

Immediately rinse with plenty of water.

If skin irritation continues, consult a doctor.

· **After eye contact:**

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

· **After swallowing:**

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

Seek medical treatment.

· **Most important symptoms and effects, both acute and delayed**

resorption

irritations

after inhalation:

mucosal irritations, cough, breathing difficulty

headache

after swallowing:

sickness

vomiting

abdominal pain

diarrhoea

after absorption of large amounts:

narcotic conditions

cardiovascular disorders

cyanosis

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

5 Fire-fighting measures

· **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.

· **Special hazards arising from the substance or mixture**

Can form explosive gas-air mixtures.

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Can burn in fire.

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

acrolein

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information**

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Suppress (knock down) gases/vapors/mists with a water spray jet.

Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- **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/sparks/open flames/hot surfaces. - No smoking.

- **Advice for emergency responders:** Protective equipment: see section 8

- **Environmental precautions:**

Do not allow product to reach sewage system or any water course.

Prevent seepage into sewage system, workpits and cellars.

Suppress gases/fumes/haze with water spray.

- **Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose contaminated material as waste according to item 13.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**

- **Advice on safe handling:**

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Protect from heat.

Keep ignition sources away - Do not smoke.

Take precautionary measures against static discharge.

- **Hygiene measures:**

Do not inhale gases / fumes / aerosols.

Take off immediately all contaminated clothing.

Wash hands before breaks and at the end of work.

Do not eat, drink or smoke when using this product.

- **Conditions for safe storage, including any incompatibilities**

- **Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Store only in the original receptacle.

- **Information about storage in one common storage facility:** Store away from oxidizing agents.

- **Further information about storage conditions:**

Store locked up or with access restricted to technical experts or their assistants.

Ensure that persons do not handle until all safety precautions have been read and understood.

Protect from heat and direct sunlight.

Protect from exposure to the light.

Protect from humidity and water.

- **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)

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· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

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

CAS: 56-81-5 glycerol	
PEL (USA)	Long-term value: 15* 5** mg/m ³ mist; *total dust **respirable fraction
TLV (USA)	TLV withdrawn-insufficient data human occup. exp.
EL (Canada)	Long-term value: 10* 3** mg/m ³ *mist, total; **mist, respirable
EV (Canada)	Long-term value: 10 mg/m ³
CAS: 110-86-1 pyridine	
PEL (USA)	Long-term value: 15 mg/m ³ , 5 ppm
REL (USA)	Long-term value: 15 mg/m ³ , 5 ppm
TLV (USA)	Long-term value: 1 ppm A3
EL (Canada)	Long-term value: 1 ppm IARC 2B
EV (Canada)	Long-term value: 1 ppm

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

· **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:**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.

· **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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Safety glasses

Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**

Do not allow product to reach sewage system or any water course.

Risk of explosion.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

· **Form / Physical state:**

Liquid

· **Color:**

Colorless

· **Odor:**

Unpleasant

· **Odor threshold:**

CAS 110-83-1: 0,0001 - 20,1 ppm

· **pH-value:**

Not determined.

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· Melting point/freezing point:	Not determined.
· Initial boiling point and boiling range:	Not determined.
· Flash point:	~36°C (~96.8°F) (c.c.)
· Flammability (solid, gas):	Flammable liquid and vapor.
· Ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Flammability or explosive limits:	
· Lower:	1.7 Vol % (CAS: 110-86-1 pyridine)
· Upper:	11.3 Vol % (CAS: 56-81-5 glycerol)
· Oxidizing properties:	none
· Vapor Pressure:	Not determined.
· Density at 20°C (68°F):	1.17 g/cm ³ (9.76 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.
· Solubility(ies)	
· Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not applicable (mixture).
· Viscosity:	
· Kinematic:	Not determined.
· Other information	
· Solids content:	0 %
· Solvent content:	
· Organic solvents:	100 %
· Water:	0 %

10 Stability and reactivity

- **Reactivity** Fumes can combine with air to form an explosive mixture.
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
 - Reacts with strong acids and oxidizing agents.
 - Reacts with halogenated compounds.
 - Reacts with peroxides.
 - Perchlorates
 - Polymerization.
 - > Danger of explosion.
- **Conditions to avoid** Heating.
- **Incompatible materials:**
 - metals
 - rubber
 - various plastics
- **Hazardous decomposition products:**
 - Flammable gases/vapors
 - In case of fire: see section 5.

11 Toxicological information

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

· Acute toxicity estimate (ATE_(MIX)) - Calculation method:

Oral	GHS ATE _(MIX)	3182 mg/kg (.)
Dermal	GHS ATE _(MIX)	4004 mg/kg (.)
Inhalative	GHS ATE _(MIX)	39 mg/l/4h (vapour)

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· LD/LC50 values that are relevant for classification:		
CAS: 56-81-5 glycerol		
Oral	LD50	12600 mg/kg (rat) (IUCLID)
Dermal	LD50	>18700 mg/kg (rabbit) (IUCLID)
CAS: 110-86-1 pyridine		
Oral	LD50	891 mg/kg (rat) (RTECS)
Dermal	LD50	1121 mg/kg (rabbit) (RTECS)
Inhalative	LC50/4h	17.75 mg/l (rat) (Vapour) (Registrant, ECHA)

· **Primary irritant effect:**

- **on the skin:** Causes skin irritation.
- **on the eye:** 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)

- **Sensitization:** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 110-86-1 pyridine		
Sensitization	OECD 406	(guinea pig: negative)
	OECD 429	(negative) (mouse)

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)	
CAS: 110-86-1	pyridine 2B

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

- **Other information:** see section 8 / 15

· **Synergistic Products:** None· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

The following statements refer to the mixture:

- **Carcinogenicity 2**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Suspected of causing cancer.
- **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)

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- **Additional toxicological information:**
- **Other information** Other dangerous properties can not be excluded.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 56-81-5 glycerol

EC50	>10000 mg/l/24h (Daphnia magna) (IUCLID)
------	------------------------------------------

EC5	3200 mg/l (Entosiphon sulcatum) (72h)
-----	---------------------------------------

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: 56-81-5 glycerol

EC5	>10000 mg/l (Pseudomonas putida) (16h)
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CAS: 110-86-1 pyridine

EC5	3.5 mg/l (Entosiphon sulcatum) (72h)
-----	--------------------------------------

	340 mg/l (Pseudomonas putida) (16h)
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- **Persistence and degradability**

CAS: 56-81-5 glycerol

OECD 301 C	63 % / 14 d (readily biodegradable) (Modified MITI Test)
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- **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 56-81-5 glycerol

log Pow	-1.76 (.) (experimental) (Merck)
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CAS: 110-86-1 pyridine

log Pow	0.65 (.) (experimental)
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- **Mobility in soil** No further relevant information available.

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

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to hazardous waste disposers.

- **Uncleaned packagings:**

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

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN1993

- **UN proper shipping name**

- **DOT**

- **IMDG, IATA**

Flammable liquids, n.o.s. (Pyridine)

FLAMMABLE LIQUID, N.O.S. (PYRIDINE)

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· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	30
· EMS Number:	F-E, <u>S</u> -E
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture	
· Sara	
· Section 355 (Extremely hazardous substances):	
None of the ingredients is listed.	
· Section 313 (Specific toxic chemical listings):	
CAS: 110-86-1	pyridine
· TSCA (Toxic Substances Control Act):	
All components have the value ACTIVE.	
· Hazardous Air Pollutants	
None of the ingredients is listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
CAS: 110-86-1	pyridine
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	

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· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
· New Jersey Right-to-Know List:	
All ingredients are listed.	
· New Jersey Special Hazardous Substance List:	
CAS: 110-86-1 pyridine	F3
· Pennsylvania Right-to-Know List:	
All ingredients are listed.	
· Pennsylvania Special Hazardous Substance List:	
CAS: 110-86-1 pyridine	E
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
· US-VOC content: 0.0 g/l / 0.00 lb/gl	
· Information about limitation of use:	
Observe national regulations where applicable:	
Employment restrictions concerning young persons must be observed.	
Employment restrictions concerning pregnant and lactating women must be observed.	
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	

*16 Other information

This information is based on our present knowledge. However, this 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 vapor.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.

· **Recommended restriction of use:** professional/industrial use only

· Last revision / date of preparation :

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12/07/2022

· 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
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation

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IATA: International Air Transport Association
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flammable Liquids 2: Flammable liquids – Category 2
Flammable Liquids 3: Flammable liquids – Category 3
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Irritation 2: Skin corrosion/irritation – Category 2
Carcinogenicity 2: Carcinogenicity – Category 2

Sources

Data arise from safety data sheets, reference works and literature.
ECOTOX Database
RTECS (Registry of Toxic Effects of Chemical Substances)

· * **Data compared to the previous version altered.**

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