

*acc. to OSHA HCS*

Printing date 08/16/2018

Review date 08/16/2018

## 1 Identification

- **Product identifier**
- **Trade name:** Standard Solution 1 in 1 mL Pyridine
- **Article number** N9331067
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

PerkinElmer, Inc.  
710 Bridgeport Avenue  
Shelton, Connecticut 06484 USA  
CustomerCareUS@perkinelmer.com  
203-925-4600

- **Emergency telephone number:**  
CHEMTREC (within US) 800-424-9300  
CHEMTREC (from outside US) +1 703-527-3887 (call collect)  
CHEMTREC (within AU) +(61)-290372994

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



Acute Tox. 4 H302 Harmful if swallowed.  
Acute Tox. 4 H312 Harmful in contact with skin.  
Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS02, GHS07
- **Signal word** Danger

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

pyridine

- **Hazard statements**  
H225 Highly flammable liquid and vapor.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

- **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use only non-sparking tools.

(Contd. on page 2)

**acc. to OSHA HCS**

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 1)

- P243 Take precautionary measures against static discharge.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
- P330 Rinse mouth.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P321 Specific treatment (see on this label).
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**3 Composition/information on ingredients**

· **Chemical characterization: Substances**

· **CAS No. Description**

110-86-1 pyridine

· **Identification number(s)** 613-002-00-7

· **EC number:** 203-809-9

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

110-86-1	pyridine	Flam. Liq. 2, H225 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	99.984%
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(Contd. on page 3)

acc. to OSHA HCS

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 2)

· <b>Additional Components</b>		
122-32-7	Triolein	0.01%
25637-84-7	Diolein	0.005%
56-81-5	glycerol	0.0005%
111-03-5	2,3-dihydroxypropyl oleate	0.0005%

#### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

#### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

#### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Prevent seepage into sewage system, workpits and cellars.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

acc. to OSHA HCS

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 3)

See Section 13 for disposal information.

**· Protective Action Criteria for Chemicals**

**· PAC-1:**

110-86-1	pyridine	3 ppm
56-81-5	glycerol	45 mg/m <sup>3</sup>

**· PAC-2:**

110-86-1	pyridine	19 ppm
56-81-5	glycerol	180 mg/m <sup>3</sup>

**· PAC-3:**

110-86-1	pyridine	3600* ppm
56-81-5	glycerol	1,100 mg/m <sup>3</sup>

**7 Handling and storage**

**· Handling:**

**· Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.

**· Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

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

**· Storage:**

**· Requirements to be met by storerooms and receptacles:** Store in a cool location.

**· Information about storage in one common storage facility:** Not required.

**· Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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

**8 Exposure controls/personal protection**

**· Additional information about design of technical systems:** No further data; see item 7.

**· Control parameters**

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

**110-86-1 pyridine**

PEL Long-term value: 15 mg/m<sup>3</sup>, 5 ppm

REL Long-term value: 15 mg/m<sup>3</sup>, 5 ppm

TLV Long-term value: 3.1 mg/m<sup>3</sup>, 1 ppm

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

**· Exposure controls**

**· Personal protective equipment:**

**· General protective and hygienic measures:**

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

(Contd. on page 5)

**acc. to OSHA HCS**

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 4)

· **Breathing equipment:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*

· **Protection of hands:**



Protective gloves

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

· **Penetration time of glove material**

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

· **Eye protection:**



Tightly sealed goggles or safety glasses

**9 Physical and chemical properties**

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

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Transparent
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· **pH-value at 20 °C (68 °F):** 8.5 0.2M aq

· **Change in condition**

· <b>Melting point/Melting range:</b>	-41.8 °C (-43.2 °F)
· <b>Boiling point/Boiling range:</b>	115 °C (239 °F)

· **Flash point:** < 23 °C (<73.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 550 °C (1,022 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

(Contd. on page 6)

acc. to OSHA HCS

Printing date 08/16/2018

Review date 08/16/2018

Trade name: Standard Solution 1 in 1 mL Pyridine

(Contd. of page 5)

· <b>Explosion limits:</b>	
<b>Lower:</b>	1.7 Vol %
<b>Upper:</b>	10.6 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	20 hPa (15 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.9819 g/cm <sup>3</sup> (8.19396 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>VOC content:</b>	0.00 %
· <b>Other information</b>	No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

110-86-1 pyridine

Oral	LD50	891 mg/kg (rat)
Dermal	LD50	1,121 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Harmful

(Contd. on page 7)

*acc. to OSHA HCS*

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 6)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

110-86-1 pyridine

3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**12 Ecological information**

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

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

Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

· **Waste treatment methods**

· **Recommendation:**

Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**

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

**14 Transport information**

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1282

· **UN proper shipping name**

· **DOT**

Pyridine solution

· **ADR**

1282 Pyridine solution

· **IMDG, IATA**

PYRIDINE solution

(Contd. on page 8)

acc. to OSHA HCS

Printing date 08/16/2018

Review date 08/16/2018

Trade name: Standard Solution 1 in 1 mL Pyridine

(Contd. of page 7)

· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids  
· **Label** 3

· **ADR**



· **Class** 3 (F1) Flammable liquids  
· **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids  
· **Label** 3

· **Packing group**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user** Warning: Flammable liquids

· **Danger code (Kemler):** 33

· **EMS Number:** F-E,S-D

· **Stowage Category** B

· **Stowage Code** SW2 Clear of living quarters.

· **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: 5 L  
On cargo aircraft only: 60 L

· **ADR**

· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

(Contd. on page 9)



acc. to OSHA HCS

Printing date 08/16/2018

Review date 08/16/2018



**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 8)

- **IMDG**
- **Limited quantities (LQ)** 1L
- **Excepted quantities (EQ)** Code: E2
- Maximum net quantity per inner packaging: 30 ml*
- Maximum net quantity per outer packaging: 500 ml*
- **UN "Model Regulation":** UN 1282 PYRIDINE SOLUTION, 3, II

**15 Regulatory information**

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

110-86-1	pyridine	 Flam. Liq. 2, H225	99.984%
		 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
122-32-7	Triolein		0.01%
25637-84-7	Diolein		0.005%

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

110-86-1 pyridine

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

110-86-1	pyridine
122-32-7	Triolein
25637-84-7	Diolein
56-81-5	glycerol
111-03-5	2,3-dihydroxypropyl oleate

· **Proposition 65**

· **Chemicals known to cause cancer:**

110-86-1 pyridine

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **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.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

110-86-1 pyridine

A3

(Contd. on page 10)

*acc. to OSHA HCS*

Printing date 08/16/2018

Review date 08/16/2018

**Trade name: Standard Solution 1 in 1 mL Pyridine**

(Contd. of page 9)

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

*Disclaimer*

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety

· **Contact:**

Within the USA: 1-(800)-762-4000

Outside the USA: 1-(203)-712-8488

· **Abbreviations and acronyms:**

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

ICAO: International Civil Aviation Organisation

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

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