

**Safety data sheet  
according to UK REACH**

Printing date 23.03.2025

Revision: 23.03.2025

**1 Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

· Trade name: PAH Standard (1 x 1 mL)

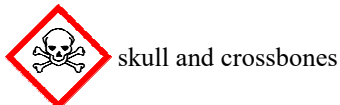
· Part number: PAH-660-1

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Reagents and Standards for Analytical Chemical Laboratory Use**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Agilent Technologies LDA UK Ltd.  
5500 Lakeside Cheadle Royal Business Park,  
Cheadle, Cheshire, SK8 3GR  
United Kingdom  
Tel: +44 (0) 345 712 5292**Further information obtainable from:**Telephone: 0800 603 1000  
pdl-msds\_author@agilent.com· **1.4 Emergency telephone number:** CHEMTREC®: +44 20 3807 3798**2 Hazards identification****2.1 Classification of the substance or mixture**

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



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



Acute Tox. 3      H331 Toxic if inhaled.



Carc. 1B      H350 May cause cancer.

STOT SE 1      H370 Causes damage to the central nervous system and the visual organs.

STOT RE 2      H373 May cause damage to organs through prolonged or repeated exposure.



Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



Skin Irrit. 2      H315 Causes skin irritation.

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Eye Irrit. 2            H319 Causes serious eye irritation.  
 STOT SE 3            H335 May cause respiratory irritation.

### · 2.2 Label elements

#### · Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

#### · Hazard pictograms



GHS02    GHS06    GHS08    GHS09

#### · Signal word Danger

#### · Hazard-determining components of labelling:

methanol  
 dichloromethane  
 dibenz[a,h]anthracene

#### · Hazard statements

H225 Highly flammable liquid and vapour.  
 H331 Toxic if inhaled.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H350 May cause cancer.  
 H370 Causes damage to the central nervous system and the visual organs.  
 H335 May cause respiratory irritation.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H411 Toxic to aquatic life with long lasting effects.

#### · Precautionary statements

P101            If medical advice is needed, have product container or label at hand.  
 P102            Keep out of reach of children.  
 P103            Read carefully and follow all instructions.  
 P210            Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P260            Do not breathe vapours.  
 P241            Use explosion-proof [electrical/ventilating/lighting] equipment.  
 P280            Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
 P308+P313    IF exposed or concerned: Get medical advice/attention.  
 P391            Collect spillage.  
 P321            Specific treatment (see on this label).  
 P501            Dispose of contents/container in accordance with local/regional/national/international regulations.

#### · 2.3 Other hazards

#### · Results of PBT and vPvB assessment

· **PBT:** Not applicable.  
 · **vPvB:** Not applicable.

## 3 Composition/information on ingredients

### · 3.2 Chemical characterisation: Mixtures

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

#### · Dangerous components:

CAS: 75-09-2	dichloromethane	62.2929%
EINECS: 200-838-9	Carc. 2, H351; STOT RE 2, H373;  Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	

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CAS: 67-56-1 EINECS: 200-659-6	methanol Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370	37.1595%
CAS: 208-96-8 EINECS: 205-917-1	acenaphthylene Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	0.1889%
CAS: 53-70-3 EINECS: 200-181-8	dibenz[a,h]anthracene Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.0189%
CAS: 56-55-3 EINECS: 200-280-6	benz[a]anthracene Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 PBT; vPvB	0.0094%

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

### 4 First aid measures

#### · 4.1 Description of first aid measures

##### · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

##### · After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

##### · After skin contact: Immediately wash with water and soap and rinse thoroughly.

##### · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

##### · After swallowing: If symptoms persist consult doctor.

#### · 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

#### · 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### 5 Firefighting measures

#### · 5.1 Extinguishing media

##### · Suitable extinguishing agents:

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

##### · For safety reasons unsuitable extinguishing agents: Water with full jet

#### · 5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

#### · 5.3 Advice for firefighters

##### · Protective equipment: Mouth respiratory protective device.

### 6 Accidental release measures

#### · 6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

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### · 6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.

### · 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.

### · 6.4 Reference to other sections

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

### · 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.

### · Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.

### · 7.2 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 container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.

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

## \* 8 Exposure controls/personal protection

### · 8.1 Control parameters

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

### · Ingredients with limit values that require monitoring at the workplace:

#### 75-09-2 dichloromethane

WEL	Short-term value: 706 mg/m <sup>3</sup> , 200 ppm Long-term value: 353 mg/m <sup>3</sup> , 100 ppm BMGV, Sk
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#### 67-56-1 methanol

WEL	Short-term value: 333 mg/m <sup>3</sup> , 250 ppm Long-term value: 266 mg/m <sup>3</sup> , 200 ppm Sk
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### · Ingredients with biological limit values:

#### 75-09-2 dichloromethane

BMGV	30 ppm Medium: end-tidal breath Sampling time: post shift Parameter: carbon monoxide
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

· **Protection of hands:**

Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: > 4 hours

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· **Form:** Fluid

· **Colour:** According to product specification

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· **Melting point/freezing point:** Undetermined.

· **Initial boiling point and boiling range:** 40 °C

· **Flash point:** 9 °C

· **Flammability (solid, gas):** Highly flammable.

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· <b>Auto-ignition temperature:</b>	455 °C
· <b>Decomposition temperature:</b>	Not determined.
· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	5.5 Vol %
<b>Upper:</b>	44 Vol %
· <b>Vapour pressure at 20 °C:</b>	360 hPa
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapour 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>	99.5 %
<b>VOC (EC)</b>	99.45 %
<b>Solids content:</b>	0.5 %
· <b>9.2 Other information</b>	No further relevant information available.

## 10 Stability and reactivity

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

## 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**  
Toxic if inhaled.

· <b>LD/LC50 values relevant for classification:</b>		
<b>ATE (Acute Toxicity Estimates)</b>		
Inhalative	LC50/4 h	8.07 mg/L

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**75-09-2 dichloromethane**

Oral	LD50	1,600 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	88 mg/L (rat)

**67-56-1 methanol**

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

**208-96-8 acenaphthylene**

Oral	LD50	1,760 mg/kg (mouse)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes skin irritation.
- **Serious eye damage/irritation**  
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**  
May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**  
Causes damage to the central nervous system and the visual organs.  
May cause respiratory irritation.
- **STOT-repeated exposure**  
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## 12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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### 13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **14.1 UN-Number**
- **Not Regulated, De minimus Quantities**

· **ADR, IMDG, IATA** - UN1992

- **14.2 UN proper shipping name**
- **ADR** 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL, DICHLOROMETHANE), ENVIRONMENTALLY HAZARDOUS
- **IMDG** FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL, DICHLOROMETHANE), MARINE POLLUTANT
- **IATA** FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL, DICHLOROMETHANE)

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class** 3 Flammable liquids.
- **Label** 3+6.1

- **IMDG**



- **Class** 3 Flammable liquids.
- **Label** 3/6.1

- **IATA**



- **Class** 3 Flammable liquids.
- **Label** 3 (6.1)

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· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	II
· <b>14.5 Environmental hazards:</b>  · <b>Marine pollutant:</b> · <b>Special marking (ADR):</b>	Product contains environmentally hazardous substances: dibenz[a,h]anthracene Symbol (fish and tree) Symbol (fish and tree)
· <b>14.6 Special precautions for user</b> · <b>Hazard identification number (Kemler code):</b> · <b>EMS Number:</b> · <b>Segregation groups</b> · <b>Stowage Category</b> · <b>Stowage Code</b>	Warning: Flammable liquids. 336 F-E,S-D (SGG10) Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>Transport category</b> · <b>Tunnel restriction code</b>	2 D/E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL, DICHLOROMETHANE), 3 (6.1), II, ENVIRONMENTALLY HAZARDOUS

## 15 Regulatory information

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

#### · Poisons Act

#### · Regulated explosives precursors

None of the ingredients is listed.

#### · Regulated poisons

None of the ingredients is listed.

#### · Reportable explosives precursors

None of the ingredients is listed.

#### · Reportable poisons

None of the ingredients is listed.

#### · Directive 2012/18/EU

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

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- **Seveso category**  
H2 ACUTE TOXIC  
E2 Hazardous to the Aquatic Environment  
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Information about limitation of use:**  
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.  
Exceptions can be made by the authorities in certain cases.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**  
H225 Highly flammable liquid and vapour.  
H301 Toxic if swallowed.  
H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H331 Toxic if inhaled.  
H335 May cause respiratory irritation.  
H350 May cause cancer.  
H351 Suspected of causing cancer.  
H370 Causes damage to organs.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.
- **Abbreviations and acronyms:**  
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
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)  
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  
ATE: Acute toxicity estimate values  
Flam. Liq. 2: Flammable liquids – Category 2  
Acute Tox. 3: Acute toxicity – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
Carc. 1B: Carcinogenicity – Category 1B  
Carc. 2: Carcinogenicity – Category 2  
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2  
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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

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