

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

1 Identification

- **Product identifier**
- **Trade name:** PAH Standard (1X1 mL)
- **Part number:** EPA-2139N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA
- **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

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



GHS08 Health hazard

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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

acetonitrile
phenanthrene
dibenz[a,h]anthracene
benzo[a]pyrene

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 1)

· Hazard statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause cancer.

· Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO₂, powder or water spray.
Store in a well-ventilated place. Keep cool.
Store locked up.
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
· Results of PBT and vPvB assessment

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

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

75-05-8	acetonitrile	99.669%
85-01-8	phenanthrene	0.127%
53-70-3	dibenz[a,h]anthracene	0.0127%
50-32-8	benzo[a]pyrene	0.0127%

4 First-aid measures

- **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.
- **After inhalation:**
Supply fresh air and to be sure call for a 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:** Immediately call a doctor.
- **Information for 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:**
CO₂, 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:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **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 item 13.

(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 3)

Ensure adequate ventilation.

· **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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

75-05-8	acetonitrile	13 ppm
85-01-8	phenanthrene	5.4 mg/m ³
208-96-8	acenaphthylene	10 mg/m ³
206-44-0	fluoranthene	8.2 mg/m ³
53-70-3	dibenz[a,h]anthracene	0.093 mg/m ³
205-99-2	benz[e]acephenanthrylene	0.12 mg/m ³
50-32-8	benzo[a]pyrene	0.6 mg/m ³
56-55-3	benz[a]anthracene	0.6 mg/m ³
191-24-2	benzo[ghi]perylene	30 mg/m ³

· **PAC-2:**

75-05-8	acetonitrile	50 ppm
85-01-8	phenanthrene	59 mg/m ³
208-96-8	acenaphthylene	110 mg/m ³
206-44-0	fluoranthene	90 mg/m ³
53-70-3	dibenz[a,h]anthracene	1 mg/m ³
205-99-2	benz[e]acephenanthrylene	1.3 mg/m ³
50-32-8	benzo[a]pyrene	120 mg/m ³
56-55-3	benz[a]anthracene	120 mg/m ³
191-24-2	benzo[ghi]perylene	330 mg/m ³

· **PAC-3:**

75-05-8	acetonitrile	150 ppm
85-01-8	phenanthrene	360 mg/m ³
208-96-8	acenaphthylene	660 mg/m ³
206-44-0	fluoranthene	400 mg/m ³
53-70-3	dibenz[a,h]anthracene	2.9 mg/m ³
205-99-2	benz[e]acephenanthrylene	7.9 mg/m ³
50-32-8	benzo[a]pyrene	700 mg/m ³
56-55-3	benz[a]anthracene	700 mg/m ³
191-24-2	benzo[ghi]perylene	2,000 mg/m ³

7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

(Contd. on page 5)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 4)

- Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
 - Keep ignition sources away - Do not smoke.
 - Protect against electrostatic charges.
 - Keep respiratory protective device available.
- **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:

75-05-8 acetonitrile

PEL	Long-term value: 70 mg/m ³ , 40 ppm
REL	Long-term value: 34 mg/m ³ , 20 ppm
TLV	Long-term value: 34 mg/m ³ , 20 ppm
	Skin

50-32-8 benzo[a]pyrene

PEL	Long-term value: 0.2 mg/m ³ see Coal tar pitch volatiles
REL	Long-term value: 0.1 mg/m ³ Coal tar pitch volatile; Pocket Guide Apps. A+C
TLV	L; BEIp

Ingredients with biological limit values:

50-32-8 benzo[a]pyrene

BEI	-
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)

- **Additional information:** The lists that were valid during the creation were used as basis.
- **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.
 - Avoid contact with the eyes.
 - Avoid contact with the eyes and skin.

(Contd. on page 6)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 5)

Breathing equipment:

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 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil 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

Information on basic physical and chemical properties
General Information
Appearance:

Form: Fluid

Color: Colorless

Odor: Aromatic

Odor threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: -46 °C (-50.8 °F)

Boiling point/Boiling range: 81 °C (177.8 °F)

Flash point: 2 °C (35.6 °F)

Flammability (solid, gaseous): Not applicable.

Ignition temperature: 525 °C (977 °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.

Explosion limits:

Lower: 4.4 Vol %

(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 6)

Upper:	16 Vol %
· Vapor pressure at 20 °C (68 °F):	0 hPa (0 mm Hg)
· Density at 20 °C (68 °F):	0.786 g/cm ³ (6.55917 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
· Solids content:	0.3 %
· Other information	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:**
ATE (Acute Toxicity Estimate)

Oral	LD50	1,324 mg/kg (rat)
Dermal	LD50	>2,007 mg/kg (rabbit)
Inhalative	LC50/4 h	3,599 mg/L (mouse)

75-05-8 acetonitrile

Oral	LD50	1,320 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	3,587 mg/L (mouse)

(Contd. on page 8)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 7)

85-01-8 phenanthrene

Oral LD50 700 mg/kg (mouse)

208-96-8 acenaphthylene

Oral LD50 1,760 mg/kg (mouse)

· Primary irritant effect:
· on the skin: No irritant effect.

· on the eye: Irritating effect.

· Sensitization: Sensitization possible through skin contact.

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

· Carcinogenic categories
· IARC (International Agency for Research on Cancer)

85-01-8	phenanthrene	3
206-44-0	fluoranthene	3
53-70-3	dibenz[a,h]anthracene	2A
205-99-2	benz[e]acephenanthrylene	2B
50-32-8	benzo[a]pyrene	1
56-55-3	benz[a]anthracene	2B
191-24-2	benzo[ghi]perylene	3

· NTP (National Toxicology Program)

85-01-8	phenanthrene	R
206-44-0	fluoranthene	R
53-70-3	dibenz[a,h]anthracene	R
205-99-2	benz[e]acephenanthrylene	R
50-32-8	benzo[a]pyrene	R
56-55-3	benz[a]anthracene	R

· 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:

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

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.

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)




(Contd. of page 8)

- **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:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities** -
- **UN-Number**
- **DOT, IMDG, IATA** UN1993
- **UN proper shipping name**
- **DOT** Flammable liquids, n.o.s. (Acetonitrile)
- **IMDG** FLAMMABLE LIQUID, N.O.S. (ACETONITRILE, dibenz[a,h]anthracene), MARINE POLLUTANT
- **IATA** FLAMMABLE LIQUID, N.O.S. (ACETONITRILE)
- **Transport hazard class(es)**
- **DOT, IATA**
- 
- **Class** 3 Flammable liquids
- **Label** 3
- **IMDG**
- 

- **Class** 3 Flammable liquids
- **Label** 3
- **Packing group**
- **DOT, IMDG, IATA** II
- **Environmental hazards:** Product contains environmentally hazardous substances: phenanthrene
- **Marine pollutant:** Symbol (fish and tree)
- **Special precautions for user** Warning: Flammable liquids

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 9)

· Danger code (Kemler):	33
· EMS Number:	F-E, <u>S-E</u>
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· 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 1993 FLAMMABLE LIQUID, N.O.S. (ACETONITRILE), 3, II, ENVIRONMENTALLY HAZARDOUS

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):

75-05-8	acetonitrile
85-01-8	phenanthrene
206-44-0	fluoranthene
53-70-3	dibenz[a,h]anthracene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
191-24-2	benzo[ghi]perylene

· TSCA (Toxic Substances Control Act):

75-05-8	acetonitrile
85-01-8	phenanthrene
208-96-8	acenaphthylene
206-44-0	fluoranthene
53-70-3	dibenz[a,h]anthracene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene

· TSCA new (21st Century Act): (Substances not listed)

53-70-3	dibenz[a,h]anthracene
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(Contd. on page 11)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 10)

· Proposition 65
· Chemicals known to cause cancer:

53-70-3	dibenz[a,h]anthracene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene

· 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.

· Carcinogenic categories
· EPA (Environmental Protection Agency)

75-05-8	acetonitrile	CBD, D
85-01-8	phenanthrene	D
208-96-8	acenaphthylene	D
206-44-0	fluoranthene	D
53-70-3	dibenz[a,h]anthracene	B2
205-99-2	benz[e]acephenanthrylene	B2
50-32-8	benzo[a]pyrene	CaH
56-55-3	benz[a]anthracene	B2
191-24-2	benzo[ghi]perylene	D

· TLV (Threshold Limit Value established by ACGIH)

75-05-8	acetonitrile	A4
205-99-2	benz[e]acephenanthrylene	A2
50-32-8	benzo[a]pyrene	A2
56-55-3	benz[a]anthracene	A2

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

50-32-8	benzo[a]pyrene
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· National regulations:
· Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

· 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.

· 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.

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/28/2019

Version Number 2

Reviewed on 03/28/2019

Trade name: PAH Standard (1X1 mL)

(Contd. of page 11)

· **Department issuing SDS:** Document Control / Regulatory· **Contact:** regulatory@ultrasci.com· **Date of preparation / last revision** 03/28/2019 / 1· **Abbreviations and acronyms:**

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

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 1B: Carcinogenicity – Category 1B

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

US