Printing date 03/30/2019

Agilent

Version Number 2

Reviewed on 03/30/2019

1 Identification

- · Product identifier
- · Trade name: PAH Standard (1X1 mL)
- · Part number: PM-810-1
- · 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



GHS08 Health hazard

Carc. 1BH350 May cause cancer.STOT RE 2H373 May cause damage to organs through prolonged or repeated exposure.



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

· Label elements

• GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS). • Hazard pictograms



· Signal word Danger

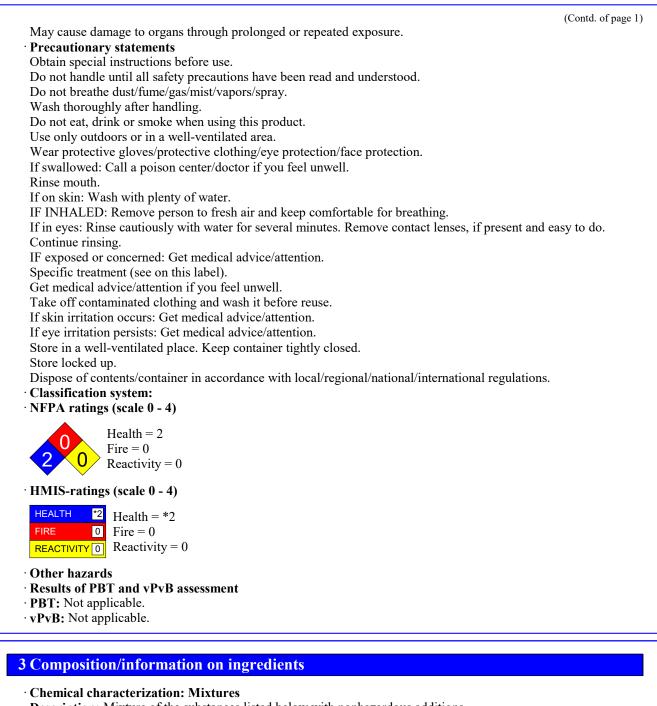
Hazard-determining components of labeling: dichloromethane
Hazard statements
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May cause respiratory irritation.

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

· Dangerous components:

75-09-2 dichloromethane

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99.476%



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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: 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: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture

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

- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Mount respiratory protective device.

· 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.

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:		
75-09-2	dichloromethane	200 ppm
	fluorene	6.6 mg/m ³
120-12-7	anthracene	48 mg/m ³
	phenanthrene	5.4 mg/m ³
	acenaphthene	3.6 mg/m ³
	acenaphthylene	10 mg/m ³
91-20-3	naphthalene	15 ppm
		(Contd. on page 4)





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206 44 0	fluoronthana	(Contd. of page 8.2 mg/m ³
	enz[a,h]anthracene 0.093 eno[1,2,3-cd]pyrene 1.2 mg	
	9 chrysene 0.	
	benz[e]acephenanthrylene	0.12 mg/m ³
	benzo[a]pyrene	0.6 mg/m ³
	benz[a]anthracene	0.6 mg/m ³
	benzo[ghi]perylene	30 mg/m ³
129-00-0	pyrene	0.15 mg/m ³
PAC-2:		
75-09-2	dichloromethane	560 ppm
86-73-7	fluorene	72 mg/m ³
120-12-7	anthracene	530 mg/m
85-01-8	phenanthrene	59 mg/m ³
83-32-9	acenaphthene	40 mg/m ³
	acenaphthylene	110 mg/m
	naphthalene	83 ppm
	fluoranthene	90 mg/m ³
	dibenz[a,h]anthracene	1 mg/m ³
	indeno[1,2,3-cd]pyrene	13 mg/m ³
218-01-9		12 mg/m ³
	benz[e]acephenanthrylene	1.3 mg/m
	benzo[a]pyrene	120 mg/m
	benz[a]anthracene	120 mg/n
	benzo[ghi]perylene	330 mg/m
129-00-0		1.7 mg/m
PAC-3 :		
	dichloromethane	6,900 ppm
	fluorene	430 mg/m ³
	anthracene	3,200 mg/m
	phenanthrene	360 mg/m ³
	acenaphthene acenaphthylene	240 mg/m ³
	- · ·	660 mg/m ³
	naphthalene	500 ppm
	fluoranthene	400 mg/m ³
	dibenz[a,h]anthracene	2.9 mg/m ³
	indeno[1,2,3-cd]pyrene	79 mg/m ³
218-01-9	•	69 mg/m ³
	benz[e]acephenanthrylene	7.9 mg/m ³
	benzo[a]pyrene	700 mg/m ³
56-55-3	benz[a]anthracene	700 mg/m ³ (Contd. on page



(Contd. of page 4) $2,000 \text{ mg/m}^3$

110 mg/m³

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191-24-2	benzo[ghi]perylene
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129-00-0 pyrene

7 Handling and storage

· Handling:

- · Precautions for safe handling
- Ensure good ventilation/exhaustion at the workplace.
- Open and handle receptacle with care.
- Prevent formation of aerosols.
- · Information about protection against explosions and fires: Keep respiratory protective device available.
- \cdot Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- 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:	
75-09-2 dichloromethane	
PEL Short-term value: 125 ppm Long-term value: 25 ppm see 29 CFR 1910.1052	
REL See Pocket Guide App. A	
TLV Long-term value: 174 mg/m ³ , 50 ppm BEI	
· Ingredients with biological limit values:	
75-09-2 dichloromethane	
BEI 0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative) • 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 and skin. 	(Contd. on page 6)



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· 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:

Safety glasses



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and c · General Information	chemical properties
· Appearance:	
Form:	Fluid
Color:	Colorless
· Odor:	Like chlorine
· Odor threshold:	Not determined.
· pH-value:	Not determined.
 Change in condition Melting point/Melting range: Boiling point/Boiling range: 	-95.1 °C (-139.2 °F) 40 °C (104 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	605 °C (1,121 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	13 Vol %
	(Contd. on page 7)



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	(Contd. of	page
Upper:	22 Vol %	
Vapor pressure at 20 °C (68 °F):	360 hPa (270 mm Hg)	
Density at 20 °C (68 °F):	1.3 g/cm ³ (10.8485 lbs/gal)	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water at 20 °C (68 °F):	20 g/l	
Partition coefficient (n-octanol/wate	er): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Organic solvents:	99.5 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	0.5 %	
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	1,608 mg/kg (rat)
	LD50	>2,011 mg/kg (rat)
Inhalative	LC50/4 h	88.5 mg/L (rat)

75-09-2 di	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)	
		(Contd. on page 8)	

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	acenaphthylene	
Oral	LD50 1,760 mg/kg (mouse)	
Primary	irritant effect:	
	tin: Irritant to skin and mucous membranes.	
	ve: Irritating effect. tion: No sensitizing effects known.	
	al toxicological information:	
The prod	uct shows the following dangers according to internally approved calcul	lation methods for preparations
Harmful		
Irritant		
	genic categories	
	nternational Agency for Research on Cancer)	
	dichloromethane	2
	fluorene	3
120-12-7	anthracene	3
	phenanthrene	3
	acenaphthene	3
	naphthalene	2
	fluoranthene	3
53-70-3	dibenz[a,h]anthracene	2
	indeno[1,2,3-cd]pyrene	2
218-01-9	chrysene	2
205-99-2	benz[e]acephenanthrylene	2
	benzo[a]pyrene	1
	benz[a]anthracene	2
	benzo[ghi]perylene	3
129-00-0		3
207-08-9	benzo[k]fluoranthene	2
NTP (Na	tional Toxicology Program)	
75-09-2	dichloromethane	
86-73-7	fluorene	
120-12-7	anthracene	
85-01-8	phenanthrene	
91-20-3	naphthalene	
206-44-0	fluoranthene	
53-70-3	dibenz[a,h]anthracene	
193-39-5	indeno[1,2,3-cd]pyrene	
218-01-9	chrysene	
205-99-2	benz[e]acephenanthrylene	
50-32-8	benzo[a]pyrene	
56-55-3	benz[a]anthracene	
129-00-0		



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207-08-9 benzo[k]fluoranthene

· OSHA-Ca (Occupational Safety & Health Administration)

75-09-2 dichloromethane

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.
- · 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 Quantit	ties -	
· UN-Number · DOT, IMDG, IATA	UN1593	
· UN proper shipping name		
·DOT	Dichloromethane	
· IMDG, IATA	DICHLOROMETHANE	
		(Contd. on page 10



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· Transport hazard class(es)	
· DOT, IMDG, IATA	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group · DOT, IMDG, IATA	III
· Environmental hazards:	Not applicable.
 Special precautions for user Danger code (Kemler): EMS Number: Segregation groups 	Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons
· Stowage Category	A
• Transport in bulk according to Annex I MARPOL73/78 and the IBC Code	II of Not applicable.
· Transport/Additional information:	
·DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L
· Hazardous substance:	On cargo aircraft only: 220 L 1000 lbs, 454 kg
·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
· UN "Model Regulation":	UN 1593 DICHLOROMETHANE, 6.1, III

15 Regulatory information

 \cdot Safety, health and environmental regulations/legislation specific for the substance or mixture \cdot Sara

· Section 3	55 (extremely hazardous substances):
129-00-0	pyrene
· Section 3	13 (Specific toxic chemical listings):
75-09-2	dichloromethane
120-12-7	anthracene
85-01-8	phenanthrene
	naphthalene
206-44-0	fluoranthene
	(Contd. on page 11)



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	(Contd. of page 1
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
191-24-2	e benzo[ghi]perylene
207-08-9	benzo[k]fluoranthene
· TSCA (1	Foxic Substances Control Act):
75-09-2	dichloromethane
86-73-7	7 fluorene
120-12-7	anthracene
85-01-8	phenanthrene
	acenaphthene
208-96-8	acenaphthylene
91-20-3	naphthalene
206-44-0) fluoranthene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
50-32-8	benzo[a]pyrene
	benz[a]anthracene
129-00-0) pyrene
· Proposit	tion 65
· Chemica	als known to cause cancer:
75-09-2	dichloromethane
91-20-3	naphthalene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	0 chrysene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
207-08-9	benzo[k]fluoranthene
	als known to cause reproductive toxicity for females:
None of	the ingredients is listed.
	als known to cause reproductive toxicity for males:
None of	the ingredients is listed.
	als known to cause developmental toxicity:
None of	the ingredients is listed.
	(Contd. on page 1



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		(Contd. of page
· Carcinog	genic categories	
	vironmental Protection Agency)	
75-09-2	dichloromethane	L
86-73-7	fluorene	D
120-12-7	anthracene	D
	phenanthrene	D
	acenaphthene	A (ora
	acenaphthylene	D
91-20-3	naphthalene	C, CB
206-44-0	fluoranthene	D
	dibenz[a,h]anthracene	B2
193-39-5	indeno[1,2,3-cd]pyrene	B2
218-01-9	•	B2
205-99-2	benz[e]acephenanthrylene	B2
50-32-8	benzo[a]pyrene	СаН
	benz[a]anthracene	B2
191-24-2	benzo[ghi]perylene	D
129-00-0		D
207-08-9	benzo[k]fluoranthene	B2
· TLV (Th	reshold Limit Value established by ACGIH)	·
75-09-2	dichloromethane	A
91-20-3	naphthalene	
218-01-9	chrysene	A
205-99-2	benz[e]acephenanthrylene	A
50-32-8	benzo[a]pyrene	A
56-55-3	benz[a]anthracene	A
· NIOSH-C	Ca (National Institute for Occupational Safety and Health)	
75-09-2	dichloromethane	
218-01-9	chrysene	
50-32-8	benzo[a]pyrene	

· 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.

· 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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com



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Date of preparation / last revision 03/30/2019 / 1	
Abbreviations and acronyms:	
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning th of Dangerous Goods by Road)	he International Carria
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	
Acute Tox. 4: Acute toxicity – Category 4	
Skin Irrit. 2: Skin corrosion/irritation – Category 2	
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A	
Carc. 1B: Carcinogenicity – Category 1B	
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3	
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2	
* Data compared to the previous version altered.	
* *	



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