Custom PAH Plus Mix

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of issue: 18/01/2018 Revision date: : Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Custom PAH Plus Mix

Product code : AL0-130250

Product group : Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Laboratory Use

Industrial/Professional use spec : Industrial
For professional use only

Use of the substance/mixture : Certified reference material for laboratory use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Phenova
6390 Joyce Dr. Suite 100
80403 Golden, CO - United States
T 1-866-942-2978 - F 1-866-283-0269
info@phenova.com - www.phenova.com

1.4. Emergency telephone number

Emergency number : ChemTel Assistance (US/Canada) 1-800-255-3924
ChemTel Assistance (International) +1 813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Dermal)	H312
Acute Tox. 4 (Inhalation)	H332
Muta. 1B	H340
Carc. 1B	H350
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.2; R45
Muta.Cat.2; R46
Xn; R20/21
N; R50/53

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07 GHS08 GHS09

Signal word (CLP)	:	Danger
Hazard statements (CLP)	:	H312+H332 - Harmful in contact with skin or if inhaled H340 - May cause genetic defects H350 - May cause cancer H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (CLP)	:	P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P271 - Use only outdoors or in a well-ventilated area P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing/eye protection/face protection P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing P308+P313 - IF exposed or concerned: Get medical advice/attention P362+P364 - Take off contaminated clothing and wash it before reuse P391 - Collect spillage P403+P235 - Store in a well-ventilated place. Keep cool P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation
EUH phrases	:	EUH208 - Contains benzo[a]pyrene(50-32-8), phenanthrene(85-01-8). May produce an allergic reaction

No labeling applicable

2.3. Other hazards

Contains PBT substances >= 0.1% assessed in accordance with REACH, Annex XIII

Contains PBT/vPvB substances >= 0.1% assessed in accordance with REACH, Annex XIII

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Methylene Chloride (Component)	(CAS No) 75-09-2 (EC-No.) 200-838-9 (EC index no) 602-004-00-3	96	Carc. 2, H351
acenaphthene (Component)	(CAS No) 83-32-9 (EC-No.) 201-469-6	0.2	Eye Irrit. 2, H319 Aquatic Chronic 2, H411
acenaphthylene (Component)	(CAS No) 208-96-8 (EC-No.) 205-917-1	0.2	Acute Tox. 1 (Dermal), H310
anthracene (Component) substance listed as REACH Candidate	(CAS No) 120-12-7 (EC-No.) 204-371-1	0.2	Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
Benzo(b)fluoranthene (Component)	(CAS No) 205-99-2 (EC-No.) 205-911-9 (EC index no) 601-034-00-4	0.2	Carc. 1B, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
benzo[a]pyrene (Component) substance listed as REACH Candidate (Benzo[def]chrysene)	(CAS No) 50-32-8 (EC-No.) 200-028-5 (EC index no) 601-032-00-3	0.2	Skin Sens. 1, H317 Muta. 1B, H340 Carc. 1B, H350 Repr. 1B, H360FD Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
benzo[a]anthracene (Component)	(CAS No) 56-55-3 (EC-No.) 200-280-6 (EC index no) 601-033-00-9	0.2	Carc. 1B, H350 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
benzo(ghi)perylene (Component)	(CAS No) 191-24-2 (EC-No.) 205-883-8	0.2	Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410
dibenzofuran (Component)	(CAS No) 132-64-9 (EC-No.) 205-071-3	0.2	Aquatic Chronic 2, H411
fluoranthene (Component)	(CAS No) 206-44-0 (EC-No.) 205-912-4	0.2	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
chrysene (Component)	(CAS No) 218-01-9 (EC-No.) 205-923-4 (EC index no) 601-048-00-0	0.2	Muta. 2, H341 Carc. 1B, H350 Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410 (M=1000)
benzo[k]fluoranthene (Component)	(CAS No) 207-08-9 (EC-No.) 205-916-6 (EC index no) 601-036-00-5	0.2	Carc. 1B, H350 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
dibenz(a,h)anthracene (Component)	(CAS No) 53-70-3 (EC-No.) 200-181-8 (EC index no) 601-041-00-2	0.2	Carc. 1B, H350 Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
carbazole (Component)	(CAS No) 86-74-8 (EC-No.) 201-696-0	0.2	Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
fluorene (Component)	(CAS No) 86-73-7 (EC-No.) 201-695-5	0.2	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
naphthalene (Component)	(CAS No) 91-20-3 (EC-No.) 202-049-5 (EC index no) 601-052-00-2	0.2	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
pyrene (Component)	(CAS No) 129-00-0 (EC-No.) 204-927-3	0.2	Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
indeno(1,2,3-cd)pyrene (Component)	(CAS No) 193-39-5 (EC-No.) 205-893-2	0.2	Carc. 1B, H350
phenanthrene (Component)	(CAS No) 85-01-8 (EC-No.) 201-581-5	0.2	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1-methylnaphthalene (Component)	(CAS No) 90-12-0 (EC-No.) 201-966-8	0.2	Acute Tox. 4 (Oral), H302 Aquatic Chronic 2, H411
2-methylnaphthalene (Component)	(CAS No) 91-57-6 (EC-No.) 202-078-3	0.2	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 2, H411

Name	Product identifier	Specific concentration limits
benzo[a]pyrene (Component)	(CAS No) 50-32-8 (EC-No.) 200-028-5 (EC index no) 601-032-00-3	(C >= 0.01) Carc. 1B, H350
dibenz(a,h)anthracene (Component)	(CAS No) 53-70-3 (EC-No.) 200-181-8 (EC index no) 601-041-00-2	(C >= 0.01) Carc. 1B, H350

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Immediately call a poison center or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up in absorbent material. Collect spillage.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Eliminate all ignition sources if safe to do so.

Hygiene measures : Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.

Incompatible materials : Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

benzo[a]pyrene (50-32-8)		
Netherlands	Grenswaarde TGG 8H (mg/m³)	550 (Benzo(a)pyreen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)

naphthalene (91-20-3)		
EU	IOELV TWA (mg/m³)	50 mg/m³ (Naphtalene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	10 ppm (Naphtalene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m³)	53 mg/m³ (Naphtalène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	10 ppm (Naphtalène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m³)	80 mg/m³ (Naphtalène; Belgium; Short time value)
Belgium	Short time value (ppm)	15 ppm (Naphtalène; Belgium; Short time value)
France	VME (mg/m³)	50 mg/m³ (Naphtalène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	10 ppm (Naphtalène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (Naphthalene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m³)	50 mg/m³ (Naftaleen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	9.4 ppm (Naftaleen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)

naphthalene (91-20-3)		
Netherlands	Grenswaarde TGG 15MIN (mg/m³)	80 mg/m³ (Naftaleen; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	15 ppm (Naftaleen; Netherlands; Short time value; Public occupational exposure limit value)

1-methylnaphthalene (90-12-0)		
Belgium	Limit value (mg/m³)	3 mg/m³ (1-Méthylnaphtalène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	0.5 ppm (1-Méthylnaphtalène; Belgium; Time-weighted average exposure limit 8 h)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.5 ppm (1-methylnaphthalene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

2-methylnaphthalene (91-57-6)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.5 ppm (2-methylnaphthalene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

Methylene Chloride (75-09-2)		
Belgium	Limit value (mg/m³)	177 mg/m³ (Chlorure de méthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	50 ppm (Chlorure de méthylène; Belgium; Time-weighted average exposure limit 8 h)
France	VLE (mg/m³)	356 mg/m³ (Dichlorométhane; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (Dichlorométhane; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m³)	178 mg/m³ (Dichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	50 ppm (Dichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm (Dichloromethane (Methylene chloride); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m³)	350 mg/m³ Dichloromethane; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	100 ppm Dichloromethane; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m³)	1060 mg/m³ Dichloromethane; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	300 ppm Dichloromethane; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

8.2. Exposure controls

Appropriate engineering controls : Either local exhaust or general room ventilation is usually required.

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.

Hand protection : Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration.

Eye protection : Chemical goggles or safety glasses. Safety glasses.

Skin and body protection : Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Colorless.

Odor	: characteristic.
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Relative density	: No data available
Solubility	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Dermal: Harmful in contact with skin. Inhalation: Harmful if inhaled.

Custom PAH Plus Mix	
ATE CLP (dermal)	1100 mg/kg body weight
ATE CLP (gases)	4500 ppmV/4h
ATE CLP (vapors)	11 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h

acenaphthene (83-32-9)	
LD50 oral rat	> 5000 mg/kg (Rat)

acenaphthylene (208-96-8)	
ATE CLP (dermal)	5 mg/kg body weight

anthracene (120-12-7)	
LD50 oral rat	> 16000 mg/kg (Rat)

carbazole (86-74-8)	
LD50 oral rat	>= 5000 mg/kg (Rat)

fluoranthene (206-44-0)	
LD50 oral rat	2000 mg/kg (Rat)
LD50 dermal rabbit	3180 mg/kg (Rabbit)
ATE CLP (oral)	2000 mg/kg body weight
ATE CLP (dermal)	3180 mg/kg body weight

naphthalene (91-20-3)	
LD50 oral rat	> 1100 mg/kg (Rat)
LD50 dermal rat	> 2500 mg/kg (Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit)

naphthalene (91-20-3)	
ATE CLP (oral)	500 mg/kg body weight

1-methylnaphthalene (90-12-0)	
LD50 oral rat	1840 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit; Literature study)
ATE CLP (oral)	1840 mg/kg body weight

2-methylnaphthalene (91-57-6)	
LD50 oral rat	1630 mg/kg (Rat)
ATE CLP (oral)	1630 mg/kg body weight

phenanthrene (85-01-8)	
LD50 oral rat	1800 mg/kg (Rat)
ATE CLP (oral)	1800 mg/kg body weight

pyrene (129-00-0)	
LD50 oral rat	2700 mg/kg (Rat)
ATE CLP (oral)	2700 mg/kg body weight

Methylene Chloride (75-09-2)	
LD50 oral rat	> 2000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study)

Skin corrosion/irritation : Not classified
Based on available data, the classification criteria are not met

Serious eye damage/irritation : Not classified
Based on available data, the classification criteria are not met

Respiratory or skin sensitization : Not classified
Based on available data, the classification criteria are not met

Germ cell mutagenicity : May cause genetic defects.

Carcinogenicity : May cause cancer.
May cause cancer

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity – single exposure : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity – repeated exposure : Not classified
Based on available data, the classification criteria are not met

Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Harmful in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.

acenaphthene (83-32-9)	
EC50 Daphnia 1	3.45 mg/l (EC50; 48 h)

anthracene (120-12-7)	
LC50 fish 2	0.00127 mg/l (LC50; 96 h)
EC50 Daphnia 2	0.0012 mg/l (EC50; 24 h)

benzo[a]anthracene (56-55-3)	
LC50 fish 1	0.0018 mg/l (LC50; 65 h)
EC50 Daphnia 1	0.01 mg/l (EC50; 96 h)

benzo[a]pyrene (50-32-8)	
LC50 fish 1	0.0056 mg/l (LC50; 38 h)
EC50 Daphnia 1	0.005 mg/l (LC50; 96 h)
Threshold limit algae 1	0.015 mg/l (EC50; 72 h)

benzo(ghi)perylene (191-24-2)	
EC50 Daphnia 1	0.0002 mg/l (LC50; 14 h)

benzo[k]fluoranthene (207-08-9)	
EC50 Daphnia 1	0.0048 mg/l (LC50; 23 h)

carbazole (86-74-8)	
EC50 Daphnia 1	2.3 - 4.9 mg/l (EC50; 48 h)
LC50 fish 2	0.93 mg/l (LC50; 96 h)

chrysene (218-01-9)	
EC50 Daphnia 1	0.0007 mg/l (LC50; 24 h)
Threshold limit algae 1	0.001 mg/l (EC0)

dibenz(a,h)anthracene (53-70-3)	
EC50 Daphnia 1	0.0004 mg/l (LC50; 3 h)

dibenzofuran (132-64-9)	
LC50 fish 1	1.78 - 1.85 mg/l (LC50; 96 h)
EC50 Daphnia 1	1.7 mg/l (LC50; 48 h)

fluoranthene (206-44-0)	
LC50 fish 1	0.0077 mg/l (LC50; 96 h)
EC50 Daphnia 1	< 0.1 mg/l (EC50; 72 h)
Threshold limit algae 1	54 mg/l (EC50; 96 h)

fluorene (86-73-7)	
EC50 Daphnia 1	0.212 mg/l (EC50; 48 h)
LC50 fish 2	5.15 mg/l (LC50; 48 h)

naphthalene (91-20-3)	
EC50 Daphnia 1	2.16 mg/l (EC50; 48 h; Daphnia magna)
LC50 fish 2	0.11 mg/l (LC50; 96 h; Oncorhynchus mykiss)
Threshold limit algae 1	0.4 mg/l (EC50; 72 h; Skeletonema costatum)

1-methylnaphthalene (90-12-0)	
LC50 fish 1	8.4 mg/l (LC50; 48 h; Salmo fario)
EC50 Daphnia 1	1.848 mg/l (LC50; 48 h)
LC50 fish 2	9 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 2	1.2 mg/l (EC50; 48 h)
Threshold limit algae 1	1.71 - 5.12,EC50; 3 h
Threshold limit algae 2	1200 µg/l (EC50; 14 days)

2-methylnaphthalene (91-57-6)	
LC50 fish 1	8 mg/l (LC50; 96 h)

phenanthrene (85-01-8)	
EC50 Daphnia 2	0.35 mg/l (EC50; 48 h)
Threshold limit algae 1	0.9 mg/l (EC50; 4 h)

pyrene (129-00-0)	
EC50 Daphnia 1	> 0.0057 mg/l (LC50; 3.4 h)
EC50 other aquatic organisms 1	1.6 mg/l (3 h; Chlorella vulgaris)
LC50 fish 2	0.0026 mg/l (LC50; 96 h)

Methylene Chloride (75-09-2)	
LC50 fish 1	193 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 1	168.2 mg/l (EC50; 48 h)

12.2. Persistence and degradability

Custom PAH Plus Mix	
Persistence and degradability	May cause long-term adverse effects in the environment.

acenaphthene (83-32-9)	
Persistence and degradability	Not readily biodegradable in water. Adsorbs into the soil.

acenaphthylene (208-96-8)	
Persistence and degradability	Biodegradability in soil: no data available.

anthracene (120-12-7)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water.
ThOD	3.41 g O_2/g substance
BOD (% of ThOD)	0.02

benzo[a]anthracene (56-55-3)	
Persistence and degradability	Not readily biodegradable in water. Photolysis in water. Ozonation in water. Forming sediments in water. Biodegradability in soil: no data available. Inhibits biodegradation processes in the soil. Adsorbs into the soil. Photodegradation in the air.
ThOD	2.95 g O_2/g substance

benzo[a]pyrene (50-32-8)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Adsorbs into the soil.
Chemical oxygen demand (COD)	2.92 g O_2/g substance
ThOD	2.92 g O_2/g substance

Benzo(b)fluoranthene (205-99-2)	
Persistence and degradability	Not readily biodegradable in water. Photolysis in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	2.92 g O_2/g substance

benzo(ghi)perylene (191-24-2)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	2.9 g O_2/g substance

benzo[k]fluoranthene (207-08-9)	
Persistence and degradability	Not readily biodegradable in water. Ozonation in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	2.92 g O_2/g substance

carbazole (86-74-8)	
Persistence and degradability	Not readily biodegradable in water.

chrysene (218-01-9)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.

dibenz(a,h)anthracene (53-70-3)	
Persistence and degradability	Not readily biodegradable in water. Ozonation in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.

dibenzofuran (132-64-9)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water.

fluoranthene (206-44-0)	
Persistence and degradability	Forming sediments in water.

fluorene (86-73-7)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Adsorbs into the soil.
ThOD	2.02 g O_2/g substance

indeno(1,2,3-cd)pyrene (193-39-5)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	2.9 g O_2/g substance

naphthalene (91-20-3)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Adsorbs into the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0 g O_2/g substance
Chemical oxygen demand (COD)	0.22 g O_2/g substance
ThOD	2.99 g O_2/g substance

1-methylnaphthalene (90-12-0)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water.

2-methylnaphthalene (91-57-6)	
Persistence and degradability	Inherently biodegradable. Not readily biodegradable in water.

phenanthrene (85-01-8)	
Persistence and degradability	Biodegradable in water. Forming sediments in water. Adsorbs into the soil.

pyrene (129-00-0)	
Persistence and degradability	Not readily biodegradable in water. Photolysis in water. Ozonation in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil. Photodegradation in the air.

Methylene Chloride (75-09-2)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.

12.3. Bioaccumulative potential

Custom PAH Plus Mix	
Bioaccumulative potential	Not established.

acenaphthene (83-32-9)	
BCF fish 1	257 - 1270 (BCF)
BCF fish 2	387 (BCF; 28 days)
Log Pow	3.92 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

acenaphthylene (208-96-8)	
Bioaccumulative potential	No bioaccumulation data available.

anthracene (120-12-7)	
BCF fish 1	903 - 2820 (BCF)
BCF fish 2	9200 (BCF)
BCF other aquatic organisms 1	7770 (BCF; 24 h; Chlorella sp.)
BCF other aquatic organisms 2	10500 (BCF)
Log Pow	4.5
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

benzo[a]anthracene (56-55-3)	
BCF fish 1	350 (BCF; 72 h)
BCF other aquatic organisms 1	1106 (BCF; 24 h)
BCF other aquatic organisms 2	18000 (BCF; 192 h)
Log Pow	5.61 - 5.79
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

benzo[a]pyrene (50-32-8)	
BCF fish 1	480 (BCF; 72 h)
BCF fish 2	70.7 (BCF; 168 h; Salmo salar)
BCF other aquatic organisms 1	3000 (BCF; 192 h)
BCF other aquatic organisms 2	1.5 (BCF; 24 h)
Log Pow	5.97 - 6.06
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

Benzo(b)fluoranthene (205-99-2)	
BCF other aquatic organisms 1	2800 (BCF; 168 h)
Log Pow	6.57
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

benzo(ghi)perylene (191-24-2)	
Log Pow	6.51 - 7.23 (Calculated)
Bioaccumulative potential	Bioaccumable.

benzo[k]fluoranthene (207-08-9)	
BCF fish 1	8750 (BCF)
BCF other aquatic organisms 1	0.0013 mg/kg (BCF)
BCF other aquatic organisms 2	37000 (BCF)
Log Pow	6.84
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

carbazole (86-74-8)	
BCF fish 1	34 - 241 (BCF)
BCF fish 2	500 (BCF)
BCF other aquatic organisms 1	115 (BCF)
BCF other aquatic organisms 2	108 (BCF; 24 h)
Log Pow	3.84 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

chrysene (218-01-9)	
BCF other aquatic organisms 1	4440 (BCF)
Log Pow	5.81 - 5.86 (Experimental value)
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

dibenz(a,h)anthracene (53-70-3)	
Log Pow	5.97 - 6.84

dibenzofuran (132-64-9)	
BCF fish 1	2420 (BCF)
BCF fish 2	524 - 2420 (BCF)
Log Pow	4.12 - 5.16
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

fluoranthene (206-44-0)	
BCF fish 1	3981 (BCF)
BCF fish 2	6110 (BCF)
BCF other aquatic organisms 1	10000 (BCF; 192 h)
BCF other aquatic organisms 2	695 (BCF; 48 h)
Log Pow	5.33
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

fluorene (86-73-7)	
BCF fish 1	2230 (BCF)
BCF fish 2	219 - 830 (BCF)
Log Pow	4.12 - 4.67
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

indeno(1,2,3-cd)pyrene (193-39-5)	
BCF other aquatic organisms 1	10000 (BCF; 240 h)
Log Pow	6.6 - 7.7
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

naphthalene (91-20-3)	
BCF fish 1	23 - 168 (BCF; 8 weeks; Cyprinus carpio)
Log Pow	3.3 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1-methylnaphthalene (90-12-0)	
BCF fish 1	20 (BCF; 5 weeks)
BCF fish 2	113-2000,BCF; 1 - 2 weeks
Log Pow	3.87 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

2-methylnaphthalene (91-57-6)	
BCF fish 1	407 (BCF; 624 h; Lepomis macrochirus)
BCF fish 2	190 (BCF; 840 h; Oncorhynchus kisutch)
Log Pow	3.86 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

phenanthrene (85-01-8)	
BCF fish 1	5100 (BCF; 672 h; Pimephales promelas)
BCF fish 2	2630 (BCF)
BCF other aquatic organisms 1	1760 (BCF)
BCF other aquatic organisms 2	325 (BCF; 24 h)
Log Pow	4.46
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

pyrene (129-00-0)	
BCF fish 1	600 - 970 (BCF)
BCF fish 2	4810 (BCF)
BCF other aquatic organisms 1	2692 (BCF)
Log Pow	4.88 - 5.32
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

Methylene Chloride (75-09-2)	
BCF fish 1	2 - 40 (BCF)
Log Pow	1.25 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

naphthalene (91-20-3)	
Surface tension	0.03 N/m (100 °C)

1-methylnaphthalene (90-12-0)	
Log Koc	Koc,2300

phenanthrene (85-01-8)	
Ecology - soil	Soil contaminant.

Methylene Chloride (75-09-2)	
Surface tension	0.028 N/m (20 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Results of PBT and vPvB assessment

Component	
anthracene (120-12-7)	This substance/mixture meets the PBT criteria of REACH, annex XIII This substance/mixture does not meet the vPvB criteria of REACH, annex XIII
benzo[a]pyrene (50-32-8)	This substance/mixture meets the PBT criteria of REACH, annex XIII This substance/mixture meets the vPvB criteria of REACH, annex XIII

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 3082

UN-No. (IATA) : 3082

UN-No. (IMDG) : 3082

UN-No. (ADN) : 3082

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s.

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Proper Shipping Name (ADN) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Transport document description (ADR) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III, (E)

14.3. Packing group

Class (ADR) : 9

Classification code (ADR) : M6

Class (IATA) : 9

Class (IMDG) : 9

Class (ADN) : 9

Classification code (ADN) : M6

Hazard labels (ADR) : 9

Hazard labels (IATA) : 9

Hazard labels (IMDG) : 9

Hazard labels (ADN) : 9

14.4. Packing group

Packing group (ADR) : III
Packing group (IATA) : III
Packing group (IMDG) : III
Packing group (ADN) : III

14.5. Environmental hazards

Dangerous for the environment :

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 90
Classification code (ADR) : M6
Orange plates :

Special provision (ADR) : 274, 335, 601, 375
Transport category (ADR) : 3
Tunnel restriction code (ADR) : E
Limited quantities (ADR) : 5l
Excepted quantities (ADR) : E1

14.6.2. Transport by sea

Special provision (IMDG) : 274, 335, 969
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
Packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP2, TP29
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A

14.6.3. Air transport

CAO packing instructions (IATA) : 964
CAO max net quantity (IATA) : 450L
PCA packing instructions (IATA) : 964
PCA Limited quantities (IATA) : Y964
PCA limited quantity max net quantity (IATA) : 30kgG
PCA max net quantity (IATA) : 450L
PCA Excepted quantities (IATA) : E1
Special provision (IATA) : A97, A158, A197
ERG code (IATA) : 9L

14.6.4. Inland waterway transport

Special provision (ADN) : 274, 335, 375, 601
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1

Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0
Carriage prohibited (ADN)	: No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains substance on the candidate list in concentration ≥ 0.1% or with a lower specific limit: Anthracene (EC 204-371-1, CAS 120-12-7), Benzo[def]chrysene (EC 200-028-5, CAS 50-32-8)

Contains no REACH Annex XIV substances.

15.1.2. National regulations

Germany

Water hazard class (WGK)	: 3 - strongly hazardous to water

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Data sources	: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	: None.

PHV SDS EU