# Phenanthrene Standard

Safety Data Sheet

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

Date of issue: 15/05/2018 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 : Phenanthrene Standard

Product code : AL0-101400

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]**

| | |
|---|---|
| Flam. Liq. 2 | H225 |
| Acute Tox. 3 (Oral) | H301 |
| Acute Tox. 3 (Dermal) | H311 |
| STOT SE 1 | H370 |

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

F; R11
T; R23/24/25
T; R39/23/24/25

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) :

GHS02 GHS06 GHS08

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapor
H301+H311 - Toxic if swallowed or in contact with skin
H370 - Causes damage to organs

| | | |
|---|---|---|
| Precautionary statements (CLP) | : | P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking<br>P233 - Keep container tightly closed<br>P260 - Do not breathe dust/fume/gas/mist/vapors/spray<br>P270 - Do not eat, drink or smoke when using this product<br>P280 - Wear protective gloves/protective clothing/eye protection/face protection<br>P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting<br>P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water<br>P308+P313 - IF exposed or concerned: Get medical advice/attention<br>P361+P364 - Take off immediately all contaminated clothing and wash it before reuse<br>P370+P378 - In case of fire: Use media other than water to extinguish<br>P403+P235 - Store in a well-ventilated place. Keep cool<br>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 phenanthrene(85-01-8). May produce an allergic reaction |

No labeling applicable

### 2.3. Other hazards

No additional information available

## 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] |
|---|---|---|---|
| methanol<br>(Component) | (CAS No) 67-56-1<br>(EC-No.) 200-659-6<br>(EC index no) 603-001-00-X | 99.9 | Flam. Liq. 2, H225<br>Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation), H331<br>STOT SE 1, H370 |
| phenanthrene<br>(Component) | (CAS No) 85-01-8<br>(EC-No.) 201-581-5 | 0.1 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Skin Sens. 1, H317<br>STOT SE 3, H335<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

| Name | Product identifier | Specific concentration limits |
|---|---|---|
| methanol<br>(Component) | (CAS No) 67-56-1<br>(EC-No.) 200-659-6<br>(EC index no) 603-001-00-X | ( 3 =<C < 10) STOT SE 2, H371<br>(C >= 10) STOT SE 1, H370 |

## 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. Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention. |
| First-aid measures after inhalation | : | Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| First-aid measures after skin contact | : | Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. 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 | : | Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persists. |
| First-aid measures after ingestion | : | Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. |

### 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. Toxic in contact with skin. |
| Symptoms/effects after ingestion | : | Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. |

### 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

Fire hazard : Highly flammable liquid and vapor.

Explosion hazard : May form flammable/explosive vapor-air mixture.

### 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. Avoid breathing dust/fume/gas/mist/vapors/spray.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 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

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

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. No open flames. No smoking. Use only non-sparking tools.

Hygiene measures : Do not eat, drink or smoke when using this product. 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

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

Storage conditions : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.

Incompatible materials : Direct sunlight. Heat sources.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **methanol (67-56-1)** | | |
|---|---|---|
| EU | IOELV TWA (mg/m³) | 260 mg/m³ (Methanol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value) |
| EU | IOELV TWA (ppm) | 200 ppm (Methanol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value) |
| Belgium | Limit value (mg/m³) | 266 mg/m³ (Alcool méthylique; Belgium; Time-weighted average exposure limit 8 h) |
| Belgium | Limit value (ppm) | 200 ppm (Alcool méthylique; Belgium; Time-weighted average exposure limit 8 h) |
| Belgium | Short time value (mg/m³) | 333 mg/m³ (Alcool méthylique; Belgium; Short time value) |
| Belgium | Short time value (ppm) | 250 ppm (Alcool méthylique; Belgium; Short time value) |
| France | VLE (mg/m³) | 1300 mg/m³ (Methanol; France; Short time value; VL: Valeur non réglementaire indicative) |

| methanol (67-56-1) | | |
|---|---|---|
| France | VLE (ppm) | 1000 ppm (Methanol; France; Short time value; VL: Valeur non réglementaire indicative) |
| France | VME (mg/m³) | 260 mg/m³ (Methanol; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante) |
| France | VME (ppm) | 200 ppm (Methanol; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante) |
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| Italy - Portugal - USA ACGIH | ACGIH STEL (ppm) | 250 ppm (Methanol; USA; Short time value; TLV - Adopted Value) |
| Netherlands | Grenswaarde TGG 8H (mg/m³) | 133 mg/m³ (Methanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value) |
| Netherlands | Grenswaarde TGG 8H (ppm) | 100 ppm (Methanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value) |
| United Kingdom | WEL TWA (mg/m³) | 266 mg/m³ Methanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005) |
| United Kingdom | WEL TWA (ppm) | 200 ppm Methanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005) |
| United Kingdom | WEL STEL (mg/m³) | 333 mg/m³ Methanol; United Kingdom; Short time value; Workplace exposure limit (EH40/2005) |
| United Kingdom | WEL STEL (ppm) | 250 ppm Methanol; 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 : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

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) : Highly flammable liquid and vapor

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

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.

| **Phenanthrene Standard** | |
|---|---|
| ATE CLP (oral) | 100.1 mg/kg body weight |
| ATE CLP (dermal) | 300.3 mg/kg body weight |

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

| **methanol (67-56-1)** | |
|---|---|
| LD50 oral rat | > 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence) |
| LD50 dermal rabbit | 15800 mg/kg (Rabbit; Literature study) |
| LC50 inhalation rat (mg/l) | 85 mg/l/4h (Rat; Literature study) |
| LC50 inhalation rat (ppm) | 64000 ppm/4h (Rat; Literature study) |
| ATE CLP (oral) | 100 mg/kg body weight |
| ATE CLP (dermal) | 300 mg/kg body weight |
| ATE CLP (gases) | 700 ppmV/4h |
| ATE CLP (vapors) | 3 mg/l/4h |
| ATE CLP (dust, mist) | 0.5 mg/l/4h |

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

Carcinogenicity : Not classified
Based on available data, the classification criteria are not met
May cause cancer

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

Specific target organ toxicity – single exposure : Causes damage to organs.

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 : Toxic if swallowed. Toxic in contact with skin.

## SECTION 12: Ecological information

### 12.1. Toxicity

| 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) |

| methanol (67-56-1) | |
|---|---|
| LC50 fish 1 | 15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value) |
| EC50 Daphnia 1 | > 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value) |
| LC50 fish 2 | 10800 mg/l (LC50; 96 h; Salmo gairdneri) |

### 12.2. Persistence and degradability

| Phenanthrene Standard | |
|---|---|
| Persistence and degradability | Not established. |

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

| methanol (67-56-1) | |
|---|---|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil. |
| Biochemical oxygen demand (BOD) | 0.6 - 1.12 g $O_2$/g substance |
| Chemical oxygen demand (COD) | 1.42 g $O_2$/g substance |
| ThOD | 1.5 g $O_2$/g substance |
| BOD (% of ThOD) | 0.8 (Literature study) |

### 12.3. Bioaccumulative potential

| Phenanthrene Standard | |
|---|---|
| Bioaccumulative potential | Not established. |

| 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). |

| methanol (67-56-1) | |
|---|---|
| BCF fish 1 | < 10 (BCF; 72 h; Leuciscus idus) |
| Log Pow | -0.77 (Experimental value; Other) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

### 12.4. Mobility in soil

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

| methanol (67-56-1) | |
|---|---|
| Surface tension | 0.023 N/m (20 °C) |
| Log Koc | Koc,PCKOCWIN v1.66; 1; Calculated value |

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 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.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

## SECTION 14: Transport information

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

### 14.1. UN number

| | | |
|---|---|---|
| UN-No. (ADR) | : | 1992 |
| UN-No. (IATA) | : | 1992 |
| UN-No. (IMDG) | : | 1992 |
| UN-No. (ADN) | : | 1992 |

### 14.2. UN proper shipping name

| | | |
|---|---|---|
| Proper Shipping Name (ADR) | : | FLAMMABLE LIQUID, TOXIC, N.O.S. |
| Proper Shipping Name (IATA) | : | Flammable liquid, toxic, n.o.s. |
| Proper Shipping Name (IMDG) | : | FLAMMABLE LIQUID, TOXIC, N.O.S. |
| Proper Shipping Name (ADN) | : | FLAMMABLE LIQUID, TOXIC, N.O.S. |
| Transport document description (ADR) | : | UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., 3 (6.1), II, (D/E) |

### 14.3. Packing group

| | | |
|---|---|---|
| Class (ADR) | : | 3 |
| Classification code (ADR) | : | FT1 |
| Class (IATA) | : | 3 |
| Class (IMDG) | : | 3 |
| Class (ADN) | : | 3 |
| Classification code (ADN) | : | FT1 |
| Subsidiary risks (ADR) | : | 6.1 |
| Subsidiary risks (IMDG) | : | 6.1 |
| Hazard labels (ADR) | : | 3, 6.1 |


Hazard labels (IATA) : 3, 6.1


Hazard labels (IMDG) : 3, 6.1


Hazard labels (ADN) : 3, 6.1


### 14.4. Packing group

| | | |
|---|---|---|
| Packing group (ADR) | : | II |
| Packing group (IATA) | : | II |
| Packing group (IMDG) | : | II |
| Packing group (ADN) | : | II |

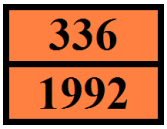
### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### 14.6.1. Overland transport

| | | |
|---|---|---|
| Hazard identification number (Kemler No.) | : | 336 |
| Classification code (ADR) | : | FT1 |

| | | |
|---|---|---|
| Orange plates | : |   |
| Special provision (ADR) | : | 274 |
| Transport category (ADR) | : | 2 |
| Tunnel restriction code (ADR) | : | D/E |
| Limited quantities (ADR) | : | 1l |
| Excepted quantities (ADR) | : | E2 |

#### 14.6.2. Transport by sea

| | | |
|---|---|---|
| Special provision (IMDG) | : | 274 |
| Limited quantities (IMDG) | : | 1 L |
| Excepted quantities (IMDG) | : | E2 |
| Packing instructions (IMDG) | : | P001 |
| IBC packing instructions (IMDG) | : | IBC02 |
| Tank instructions (IMDG) | : | T7 |
| Tank special provisions (IMDG) | : | TP2, TP13 |
| EmS-No. (Fire) | : | F-E |
| EmS-No. (Spillage) | : | S-D |
| Stowage category (IMDG) | : | B |
| Properties and observations (IMDG) | : | Flammable toxic liquid which is not specified by name in this class or, on account of its characteristics, in some other class. Toxic if swallowed, by skin contact or by inhalation. |

#### 14.6.3. Air transport

| | | |
|---|---|---|
| CAO packing instructions (IATA) | : | 364 |
| CAO max net quantity (IATA) | : | 60L |
| PCA packing instructions (IATA) | : | 352 |
| PCA Limited quantities (IATA) | : | Y341 |
| PCA limited quantity max net quantity (IATA) | : | 1L |
| PCA max net quantity (IATA) | : | 1L |
| PCA Excepted quantities (IATA) | : | E2 |
| Special provision (IATA) | : | A3 |
| ERG code (IATA) | : | 3HP |

#### 14.6.4. Inland waterway transport

| | | |
|---|---|---|
| Special provision (ADN) | : | 274, 802 |
| Limited quantities (ADN) | : | 1 L |
| Excepted quantities (ADN) | : | E2 |
| Carriage permitted (ADN) | : | T |
| Equipment required (ADN) | : | PP, EP, EX, TOX, A |
| Ventilation (ADN) | : | VE01, VE02 |
| Number of blue cones/lights (ADN) | : | 2 |
| 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 no REACH candidate substance
Contains no REACH Annex XIV substances.

#### 15.1.2. National regulations

**Germany**

| | | |
|---|---|---|
| Water hazard class (WGK) | : | nwg - non-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