



# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 22.06.2016

Version number 1

Revision: 22.06.2016

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

### 1.1 Product identifier

Product name: **PAH-Mix 24 deuterated 10 ng/μL in n-Hexane**

Part number: DRE-LA20950024HE

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

No further relevant information available.

Application of the substance / the mixture Reference material for laboratory use only

### Manufacturer/Supplier:

LGC Limited  
Queens Road  
Teddington  
Middlesex TW11 0LY  
UNITED KINGDOM

Tel : +44 (0) 20 8943 7000  
Fax : +44 (0) 20 8943 2767  
eMail : [gb@lgcstandards.com](mailto:gb@lgcstandards.com)  
Web : [www.lgcstandards.com](http://www.lgcstandards.com)

### Further information obtainable from:

Product safety department  
eMail : [sds-request@lgcgroup.com](mailto:sds-request@lgcgroup.com)

1.4 Emergency telephone number: +44 (0) 20 8943 7000 (Monday - Friday : 8am - 5pm)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

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



GHS08 health hazard

Repr. 2 H361f Suspected of damaging fertility.

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS09 environment

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



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

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## Hazard pictograms



GHS02 GHS07 GHS08 GHS09

## Signal word Danger

## Hazard-determining components of labelling:

n-Hexane

## Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H361f Suspected of damaging fertility.

H336 May cause drowsiness or dizziness.

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

H304 May be fatal if swallowed and enters airways.

H411 Toxic to aquatic life with long lasting effects.

## Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## 2.3 Other hazards

## Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

## 3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

## Dangerous components:

CAS: 110-54-3 EINECS: 203-777-6 RTECS: MN 9275000	n-Hexane Flam. Liq. 2, H225; Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; STOT SE 3, H336	> 99%
CAS: 15067-26-2 RTECS: -	Acenaphthene-D10 Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	< 0.1%
CAS: 1719-03-5 RTECS: -	Chrysene-D12 Muta. 2, H341; Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	< 0.1%
CAS: 1146-65-2 EINECS: 214-552-7 RTECS: -	Naphthalene-D8 Flam. Sol. 2, H228; Carc. 2, H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302	< 0.1%
CAS: 1517-22-2 RTECS: -	Phenanthrene D10 Aquatic Chronic 1, H410; Acute Tox. 4, H302	< 0.1%

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**· Additional information:**

For the wording of the listed hazard phrases refer to section 16.

The minor component in this product has been isotopically labelled with deuterium, a stable form of hydrogen.

**SECTION 4: First aid measures****· 4.1 Description of first aid measures****· General information:**

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

**· After inhalation:**

In case of unconsciousness place patient in recovery position for transport.

Seek medical treatment in case of complaints.

Take affected persons into fresh air and keep quiet.

**· After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

**· After eye contact:** Rinse opened eye for several minutes under running water.**· After swallowing:**

Rinse mouth. Do not induce vomiting.

Seek immediate medical advice.

**· 4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.**· 4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures****· 5.1 Extinguishing media**

· **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

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

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

Formation of toxic gases is possible during heating or in case of fire.

**· 5.3 Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

**SECTION 6: Accidental release measures****· 6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

**· 6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**· 6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Ensure good ventilation/extraction at the workplace.  
Store in cool, dry place in tightly closed receptacles.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
  - **Storage:**
  - **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.  
Store only in the original receptacle.  
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
  - **Information about storage in one common storage facility:** Store away from foodstuffs.
  - **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

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

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

<b>110-54-3 n-Hexane</b>
WEL Long-term value: 72 mg/m <sup>3</sup> , 20 ppm

- **Additional information:** Lists used were valid at the time of SDS preparation.

- **8.2 Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the skin.  
Avoid contact with the eyes and skin.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

*The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374*



Protective gloves

· **Material of gloves** Nitrile rubber, NBR

· **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

· **Eye protection:**



Tightly sealed goggles

### SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

**Form:** Liquid

**Colour:** Colourless

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** -95 °C

**Boiling point/Boiling range:** 69 °C

· **Flash point:** -26 °C

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:** 240 °C

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures is possible.

· **Explosion limits:**

**Lower:** 1.2 Vol %

**Upper:** 7.4 Vol %

· **Vapour pressure at 20 °C:** 160 hPa

· **Density at 20 °C:** 0.66 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

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- |   |  |
|---|--|
| · <b>Solubility in / Miscibility with water at 20 °C:</b> | 0.1 g/l                                    |
| · <b>Partition coefficient (n-octanol/water):</b>         | Not determined.                            |
| · <b>Viscosity:</b>                                       |  |
| <b>Dynamic:</b>   | Not determined.                            |
| <b>Kinematic:</b>   | Not determined.                            |
| · <b>9.2 Other information</b>                            | No further relevant information available. |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** Stable under normal conditions.
- **10.2 Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
Formation of toxic gases is possible during heating or in case of fire.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heat.
- **10.5 Incompatible materials:** Strong oxidizing agents.
- **10.6 Hazardous decomposition products:**  
Formation of toxic gases is possible during heating or in case of fire.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

#### · **LD/LC50 values relevant for classification:**

##### **110-54-3 n-Hexane**

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes skin irritation.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**  
Repr. 2
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**  
Suspected of damaging fertility.
- **STOT-single exposure**  
May cause drowsiness or dizziness.
- **STOT-repeated exposure**  
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard**  
May be fatal if swallowed and enters airways.

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### SECTION 12: Ecological information

#### · 12.1 Toxicity

##### · Aquatic toxicity:

##### 110-54-3 n-Hexane

EC50/48 h 2.1 mg/l (daphnia)

LC50/96 h 2.5 mg/l (fish)

· 12.2 Persistence and degradability No further relevant information available.

· 12.3 Bioaccumulative potential No further relevant information available.

· 12.4 Mobility in soil No further relevant information available.

##### · Ecotoxicological effects:

· Remark: Toxic for fish

##### · Additional ecological information:

##### · General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

##### · 12.5 Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

· 12.6 Other adverse effects No further relevant information available.

### SECTION 13: Disposal considerations

#### · 13.1 Waste treatment methods

##### · Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

##### · European waste catalogue

Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

##### · Uncleaned packaging:

· Recommendation: Dispose of in accordance with national regulations.

### SECTION 14: Transport information

#### · 14.1 UN-Number

##### · ADR, IMDG, IATA

UN1208

##### · ADR

1208 HEXANES mixture, ENVIRONMENTALLY  
HAZARDOUS

##### · IMDG

HEXANES mixture, MARINE POLLUTANT

##### · IATA

HEXANES mixture

#### · 14.3 Transport hazard class(es)

##### · ADR, IMDG



##### · Class

3 Flammable liquids.

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· **Label** 3· **IATA**· **Class** 3 Flammable liquids.· **Label** 3· **14.4 Packing group**· **ADR, IMDG, IATA** II· **14.5 Environmental hazards:** Product contains environmentally hazardous substances:  
Acenaphthene-D10, n-Hexane· **Marine pollutant:** Yes

Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)· **14.6 Special precautions for user** Warning: Flammable liquids.· **Danger code (Kemler):** 33· **EMS Number:** F-E,S-D· **14.7 Transport in bulk according to Annex II of  
Marpol and the IBC Code** Not applicable.· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)** 1L· **Transport category** 2· **Tunnel restriction code** D/E· **UN "Model Regulation":** UN1208, HEXANES mixture, ENVIRONMENTALLY  
HAZARDOUS, 3, II

### SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Philippines Inventory of Chemicals and Chemical Substances**

110-54-3 n-Hexane

· **Australian Inventory of Chemical Substances**

110-54-3 n-Hexane

· **Standard for the Uniform Scheduling of Medicines and Poisons**

None of the ingredients is listed.

· **Directive 2012/18/EU**· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t· **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction:** 3· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

The information in this safety data sheet (SDS) has been prepared with due care and is true and accurate to the best of our knowledge. The user must determine the suitability of the information for its particular purpose, ensure compliance with existing laws and regulations, and be aware that other or additional safety

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or performance considerations may arise when using, handling and/ or storing the material. The information in this SDS does not purport to be all inclusive or a guarantee as to the properties of the material supplied, and should be used only as a guide. LGC makes no warranties or representations as to the accuracy and completeness of the information contained herein, shall not be held responsible for the suitability of this information for the user's intended purposes or the consequences of such use, and shall not be liable for any damage or loss, howsoever arising, direct or otherwise.

**· Relevant phrases**

H225 Highly flammable liquid and vapour.  
H228 Flammable solid.  
H302 Harmful if swallowed.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H351 Suspected of causing cancer.  
H361f Suspected of damaging fertility.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

**· 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  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
SVHC: Substances of Very High Concern  
Flam. Liq. 2: Flammable liquids – Category 2  
Flam. Sol. 2: Flammable solids – Category 2  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
Muta. 2: Germ cell mutagenicity – Category 2  
Carc. 1B: Carcinogenicity – Category 1B  
Carc. 2: Carcinogenicity – Category 2  
Repr. 2: Reproductive toxicity – Category 2  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2  
Asp. Tox. 1: Aspiration hazard – Category 1  
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1  
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1  
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

**· Sources**

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.