Certified Reference Material

BAM-K009

Lubricating oil calibration standard for Total Petrol Hydrocarbons (TPH) analysis in environmental matrices

ausverkauft / out of stock

Certified Value

Characteristic	Value g/g	Uncertainty * g/g	Relative Uncertainty %
Mass fraction of the boiling range C_{10} – C_{40}	0.995	+ 0.005 - 0.006	+ 0.53 - 0.61

* Expanded uncertainty *U* with a coverage factor of *k* = 2, corresponding to a level of confidence of about 95 % according to GUM (Guide to the expression of uncertainty in measurement), ISO, 1995.

Material Description

The reference material is bottled in amber screw capped culture tubes containing about 5 g (7 mL) of the lubricating oil. The screw caps are equipped with a PTFE insert inside. Additive free lubricating oil (HVI 50), provided by Shell Global Solutions GmbH, Hamburg, Germany, was used for the preparation of BAM-K009. The reference material BAM-K009 was certified for its mass fraction of the boiling range C_{10} (n-decane, b.p.: 174 °C) to C_{40} (n-tetracontane, b.p.: 525 °C). Figure 1 displays the GC-FID chromatogram of the calibration standard BAM-K009.

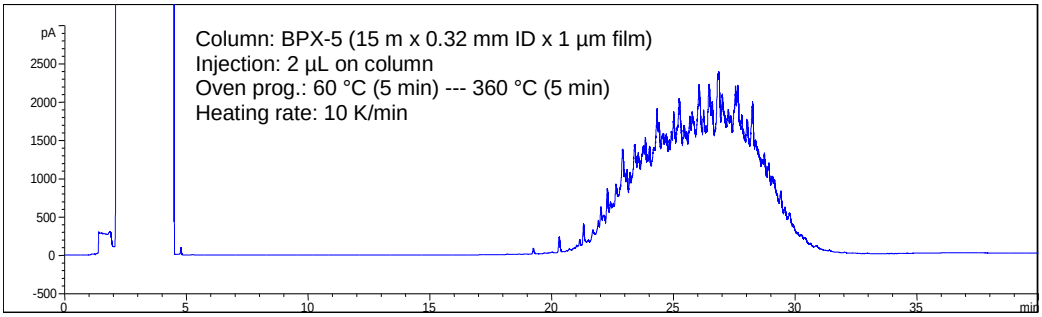

Fig.1: GC-FID chromatogram of diesel oil calibration standard BAM-K009

This certificate is valid until 12 months after dispatch.

Date of dispatch:

Recommended Use
The reference material BAM-K009 is used as type B - calibration standard according to the analytical procedures EN ISO 9377-2 (2000), ISO 16703 (2004) and EN 14039 (2004) for the gas chromatographic determination of TPH in water, soil and waste by means of GC-FID. According to these standard procedures n-decane and n-tetracontane are to use as retention time marker. These substances were not added to BAM-K009. According to the mentioned standard procedures, the calibration is done by using a mixture of two different mineral oils (type A and type B, both free of additives) with a mass ratio of 1:1. Please note that the certified value of BAM-K009 has to be considered for the resulting mass fraction of the boiling range C_{10} – C_{40} when mixtures of BAM-K009 with a type A oil are prepared.

Handling
Proper use of the reference material is essential to avoid potential harm to the user. It is strongly recommended to handle and dispose the reference material in accordance with the guidelines for hazardous materials legally in force at the site of end use and disposal. The safety data sheets of the mineral oils used for the production of the reference material are available on the website www.webshop.bam.de. After removal of a portion the container is to be closed tightly.

Transport and Storage
The calibration standard is to be stored tightly closed at room temperature in the dark. If the material should become turbid by time, it should be replaced by a fresh unit and storage conditions should be checked.

Metrological Traceability
The mass fraction of the boiling range C_{10} – C_{40} (corresponding to the boiling points of n-decane and n-tetracontane) is traceable to a mineral oil reference mixture consisting of four hydrocarbons with defined purities.

Accepted as BAM-CRM on January 10, 2006

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