

# Validated Reference Material MOSH/MOAH in black pepper (spice)

## P2103-RMPe



- Summary -

Please note:

Reference material P2103-RMPe is a validated control material and not a certified reference material. The reference material is validated in the method ring test P2103-MRT, which is organised, performed and evaluated according to the requirements of ISO17043 and the “International Harmonized Protocol”. ISO13528 is considered during the evaluation of the submitted results and during homogeneity testing. Details related to the applied statistics are summarised in the full specification, which is provided after purchase of the reference material.

The reference material consists of 75 g of ground black pepper (spice), which is spiked with the lubricant oil Shell Gadus as well as with a technical white oil (see table 1). Shell Gadus contains MOSH and MOAH, while the technical creeping oil contains MOAH and is free from MOSH. The corresponding unspiked ground black pepper (spice) is available as blank material P2103-BLPe (75 g). The blank material contains total MOSH at a level of about 3 mg/kg, while total MOAH is < 1 mg/kg.

The reference material is validated in method ring test P2103-MRT with 8 laboratories. The spiked levels as well as the assigned values, which are calculated of the results of the participants of the method ring test P2103-MRT, are summarised in table 1. The level of MOSH in the blank material is not considered during calculation of the assigned value. If the level of MOSH in the blank material is considered for calculation of the assigned value related to the test material, the assigned value is 7.0 mg/kg (99 % of the spiked level).

*Table 1. Reference material P2103-RMPe - spiked levels and assigned values*

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Total number of results
Total MOSH ( $\geq$ n-C10 to $\leq$ n-C50)	7.1	10.9	7
Total MOAH ( $\geq$ n-C10 to $\leq$ n-C50)	8.3	7.70	8

*Table 2. Blank material P2103-BLPe (assigned values)*

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Total number of results
Total MOSH ( $\geq$ n-C10 to $\leq$ n-C50)	unspiked	3.52	7
Total MOAH ( $\geq$ n-C10 to $\leq$ n-C50)	unspiked	< 1	8

Total MOSH and total MOAH are determined according to the guidance document of JRC:

*“[...] by integration of the whole signal interval in the chromatogram, starting at the retention time of the peak start of n-C10 and ending at the retention time of the peak end of n-C50 after the elimination of the identified sharp peaks above the hump and if possible, elimination of POH and/or POA signals.”*

(Bratinova S, Hoekstra E. Guidance on sampling, analysis and data reporting for the monitoring of mineral oil hydrocarbons in food and food contact materials. Luxembourg: Publications Office of the European Union; 2019, Page 16).