

ISO 20122:2024-04 (E)

Vegetable oils - Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID) analysis - Method for low limit of quantification

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	2
5	Reagents	3
6	Apparatus	6
7	Sample	7
7.1	Sampling	7
7.2	Preparation of the final sample for liquid and solid fats	7
8	Procedures	8
8.1	General	8
8.2	Hexane/ethanol distribution for removal of interfering substances	8
8.3	Saponification	8
8.4	Removal of biogenic n-alkanes with aluminium oxide for determination of the MOSH fraction	9
8.5	Clean-up before epoxidation to separate polar substances	9
8.6	Ethanol epoxidation of the MOAH fraction to oxidize unsaturated non-aromatic compounds	9
8.7	HPLC-GC separation	10
8.7.1	HPLC conditions	10
8.7.2	GC configuration	10
8.7.3	Solvent vapour exit configuration	11
8.7.4	Peak identification	11
8.7.5	System suitability test	12
8.8	Blank run	13
8.9	Quality control	13
9	Result of the determination	13
9.1	Testing the chromatograms for sufficient epoxidation and other relevant parameters	13
9.2	Calculation	14
10	Precision of the method	15
10.1	Repeatability limit	15
10.2	Reproducibility limit	15
11	Test report	15

Annex A (informative) Graphics and chromatograms	17
Annex B (informative) Precision data	28
Annex C (informative) Alternative method for the epoxidation of the MOAH fraction (performic acid epoxidation)	41
Bibliography	42