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Animal and vegetable fats and oils — Determination of aliphatic hydrocarbons in vegetable oils

Corp gras d'origines animale et végétale — Détermination des hydrocarbures aliphatiques en corps gras d'origines végétale

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

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The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

Introduction

The major saturated hydrocarbons present in vegetable oils are long chain *n*-alkanes, containing more than 21 carbon atoms, and having an odd carbon number preference.[1]

Mineral oils can contain *n*-alkanes with up to 60 carbon atoms with no odd carbon predominance. Chromatograms of mineral oils obtained by this method are characterized by a wide peak due to the presence of a complex mixture of saturated branched and cyclic hydrocarbons. Medium and low viscosity mineral oils are typically characterized by a complex mixture with between C10 and C25 chain length; while high viscosity mineral oils are indicated by a complex mixture with the midpoint around C30 chain length.[2] The Joint FAO/WHO Expert Committee on Food Additives (JECFA) has set several ADIs for mineral oil (2002) dividing low-medium viscosity mineral oils into three different subclasses depending on the point of toxicity. This method does not help to distinguish between different classes.

Chromatograms of diesel oil are characterized by the presence of *n*-alkanes between C10 and C25 chain length with no odd carbon predominance, i.e. both even and odd numbered hydrocarbons are present in relatively equal proportions.