

STN P	Skúšanie papiera a lepenky Stanovenie prenosu minerálnych olejových uhl'ovodíkov z materiálov určených na styk s potravinami vyrobených s podielom recyklovanej buničiny	STN P CEN/TS 18244 50 7024
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Testing of paper and board - Determination of the transfer of mineral oil hydrocarbons from food contact materials containing recycled pulp

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/26

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CEN/TS 18244

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English Version

Testing of paper and board - Determination of the transfer of mineral oil hydrocarbons from food contact materials containing recycled pulp

Essais des papiers et pâtes - Détermination du transfert d'hydrocarbures d'huile minérale à partir de matériaux en contact avec les aliments contenant de la pâte recyclée

Prüfung von Papier und Pappe - Bestimmung des Übergangs von Mineralölkohlenwasserstoffen aus Lebensmittelbedarfsgegenständen, die Altpapierstoff enthalten

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CEN/TS 18244:2026 (E)

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European foreword

This document (CEN/TS 18244:2026) has been prepared by Technical Committee CEN/TC 172 “Pulp, paper and board”, the secretariat of which is held by DIN.

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CEN/TS 18244:2026 (E)**Introduction**

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) has been concerned with questions involving the occurrence, application and toxicology of mineral oil hydrocarbons in food [1], [2] since the first decade of the 21st century. Thus, among other things, it became clear that the occurrence of hydrocarbons in food is not only attributable to targeted use of additives containing mineral oil, but is also based on naturally occurring ingredients. Impurities from manufacturing, processing, packaging and transport processes were also known.

Mineral oil hydrocarbons came into focus in connection with food packaging after it was determined in 2009 that they occur in packaging made from recycled paper board or paper and can migrate into food. Printing ink containing mineral oil, used particularly in newspaper printing, was identified as the main source of the mineral oil hydrocarbons in recycled paper board and paper [3]. These printing inks contain highly refined mineral oil products as solvents. A distinction was made between mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH).

Within the scope of a decision-making guidance project of the German Federal Ministry of Food, Agriculture and Consumer Protection the contaminant load of packaging containing recycled fibres as well as the potential migration of mineral oil hydrocarbons in particular were proven [4]. Mineral oil hydrocarbons were ascertained in a large number of dry, non-fatty foodstuffs from the retail trade; although there was no causal examination of their sources of input in this study design.

As a result of the "mineral oil discussion" over several years within the entire food chain, including the packaging and raw material industries, private and public testing facilities, authorities and non-governmental organizations, additional knowledge is available today with regard to foreseeable sources of contamination, avoidable and unavoidable ubiquitous contamination, as well as the analytic challenges.

Since that time the food chain has developed different strategies and technologies with which sources of entry can be identified and controlled. Thus, the measurable concentration of mineral oil hydrocarbons was able to be substantially reduced in the case of a very large number of foods. The declining number of complaints from the official food inspection authorities and regular publication of product testing provide ample proof.

Manufacturers and converters offer various marketable solutions for protecting food from the migration of mineral oil hydrocarbons from sustainable, fibre-based packaging and/or for protection against ubiquitous mineral oil hydrocarbons:

- 1) use of select qualities of paper and board for recycling with reduced mineral oil hydrocarbons for manufacturing recycled paper and board;
- 2) use of paper and board from virgin fibre for manufacturing food contact materials;
- 3) use of paper and board from virgin or recycled fibre with a functional barrier (coating and/or addition of adsorbents to the fibre pulp).

Which approach ensures the best possible protection of a given food against the transfer of mineral oil hydrocarbons from fibre-based food contact materials or contamination from the environment can in each case only be determined by the market participants in the individual case of application.

It has been shown that numerous factors of influence, among other things like the kind of food (fatty, dry, etc.), its storage life, its processing, transport and storage conditions as well as the use by the consumer, are to be considered when it comes to configuration of a suitable packaging system.

The migration potential of mineral oil hydrocarbons is of crucial importance for evaluation of the functional barrier quality of fibre-based packaging materials and packaging components. As a rule, the functionality of a barrier is evaluated through measurement of the migration of substances (in this case mineral oil hydrocarbons) over a defined period of time (e.g. shelf life of the foodstuffs).

Thus, it follows, that for these barrier solutions it is necessary to examine the migration of mineral oil hydrocarbons with the help of a standardised measuring method.

With this document a standardised measuring method is made available for evaluating the functional barrier quality. In the individual case of application, it allows for conclusions about estimates of the migration of mineral oil hydrocarbons from fibre-based paper and board equipped with a barrier.

The measuring method is applicable to paper and board (sheets and reels) and with restrictions (applicable) to the finished, three-dimensional food contact material (e.g. folding boxes).

The manufacturers of fibre-based paper and board with barrier function know the individual processing conditions for their materials and recommend them to their customers. These specifications enable the converter to perform an individual case risk evaluation of migration from the finished food contact material for the unprocessed material on the basis of the determined values.

This document only describes a standardized measuring method for the determination of migration values. It does not define any quality requirements for paper and board with barrier function or fibre-based food contact materials manufactured from them.

CEN/TS 18244:2026 (E)**1 Scope**

This document specifies a test method for estimating the transfer of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) from food contact materials containing recycled pulp.

This test method is applicable for examining the extent of migration from paper and board equipped with a barrier or other technical solutions to reduce the amount of migration.

This test method is also applicable to paper and board made from virgin fibres.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1186-1, *Materials and articles in contact with foodstuffs — Plastics — Part 1: Guide to the selection of conditions and test methods for overall migration*

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