Mineral Oil Barrier
Packaging Films

proven protection
against the migration
of MOSH and MOAH

enhanced barrier
up to 128 weeks
protection

tested product quality
analysed according to
DIN EN 13130-1

Treofan delivers high-quality film solutions for major brands in the consumer goods industry worldwide.

Our exceptional range of packaging solutions have been carefully tailored and optimised over time. We constantly strive to meet the high performance and cost-effective needs of our customers.

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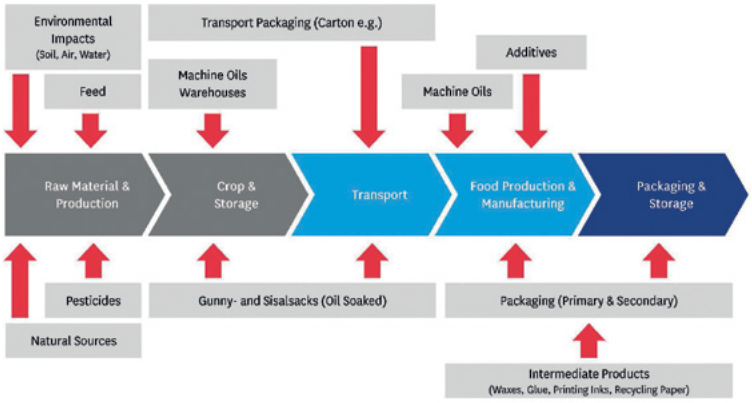
TREOFAN

Mineral oil contamination of food – an issue along the entire supply chain

Mineral Oil Hydrocarbons (MOH) occur in all process stages of food production, e.g. during cultivation, harvesting, storage, processing or production, and contaminate food along the supply chain. This includes in particular saturated mineral oil hydrocarbons (Mineral Oil Saturated Hydrocarbons = MOSH) and, to a lesser extent, aromatic mineral oil hydrocarbons (Mineral Oil Aromatic Hydrocarbons = MOAH).

MOSH and MOAH are easily absorbed from food into the body and can accumulate in body fat as well as in human organs. It cannot be ruled out that within MOAH also carcinogenic compounds occur. Recent studies have shown that more than 80% of tested products were contaminated by mineral oils.

Sources of Mineral oil contamination at a glance



Recycled carton packaging at the focus

Dried foodstuffs, like pasta or rice e.g., cereals, confectionery as well as biscuits and bakery are typically packed into recycled cartons, which are contaminated with mineral oil residues. The main source for this contamination are printing inks, varnishes, adhesives or waxes in the recycled carton board. Packed in this primary or secondary packaging for a longer period, food can become contaminated with MOSH and MOAH.

Studies have shown a maximum substance detected in food of 100 mg/kg MOSH and 16 mg/kg MOAH. Dry food, with a high specific surface area, including fat content and with a long shelf life is particularly affected by contamination. The transition of mineral oil residues to foodstuff occurs via the gas phase (up to C-24).

Functional barrier films to minimise the contamination

According to the 3rd Draft of the German Ministry for Nutrition, Agriculture and Consumer Protection (BMELV) from 24.07.2014, a specific migration limit (SML) was provided, with a maximum of 24 mg/kg MOSH and 6 mg/kg MOAH in cardboard. Limits of contamination in food should not exceed 2 mg/kg MOSH and 0,5 mg/kg MOAH. In the current 4th draft of the BMELV from 07.03.2017, the specific migration limit (SML) for Mineral Oil Saturated Hydrocarbons (MOSH) was removed. So far no limit definition has been set by any European or national legislation.

To minimise the contamination with MOSH and MOAH from recycled paper in contact with food, it was recommended to use functional barrier films for an effective protection.

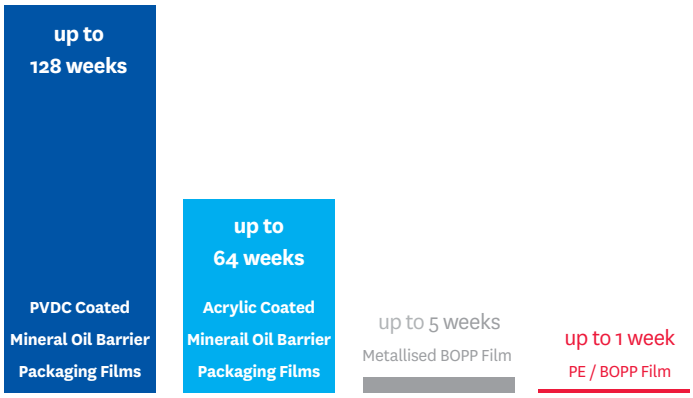
Treofan Mineral Oil Barrier Films –
effective protection for up to 128 weeks

Treofan's Mineral Oil Barrier Packaging Films are providing an effective protection against the migration of mineral oil residues from recycled cardboard into food. Testing results of the ifP Institute proved an enhanced mineral oil barrier up to 128 weeks (more than 32 months) at room temperature.

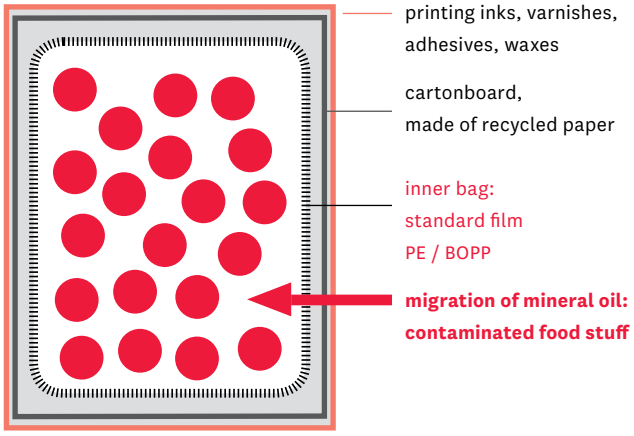
Compared with standard packaging substrates, such as standard PE, uncoated or metallised BOPP films, Treofan Mineral Oil Barrier Packaging Films significantly reduce the migration of mineral oil residues.

Detailed testing protocols and additional information are available upon request via the Treofan Food Safety Department under **foodsafety@treofan.com**.

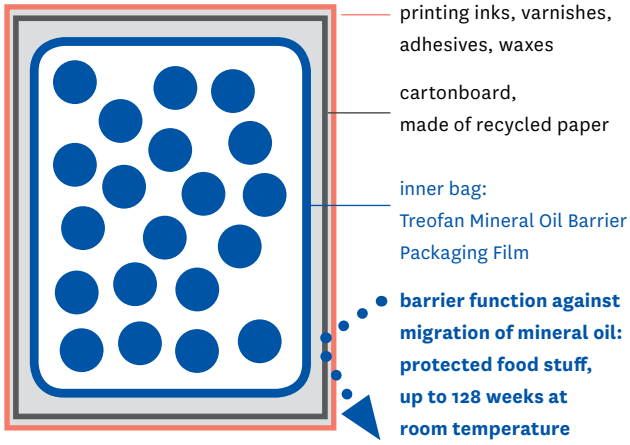
Maximal barrier protection against migration of mineral oil residues
(Data based on analysis of ifP Institute and SVI Institute)



Standard food packaging: PE / BOPP film



Protected food packaging: Treofan Mineral Oil Barrier Films



Tested & proven product quality
analysed by an accredited laboratory

Treofan's Mineral Oil Barrier Packaging Films have been tested in accordance with standardised methods (migrated according to DIN EN 13130-1, analysed by on-line LC-GC-FID), corresponding to the limit of the current draft of the German Mineral Ordinance. Tests were realised by the ifp Institute for Product Quality, Berlin/Germany, an independent and neutral laboratory and competence centre for modern food, feed and pharma analytics (www.ifp-labs.com). The institute is involved in numerous research projects and develops and produces innovative diagnostic products for use in public and industrial laboratories.
In the ifp laboratory the hydrocarbon fractions are separated by HPLC coupled with GC-FID detection. The samples are evaluated using characterised standards. The quantification limit is 0,5-0,6 mg/kg depending on the sample material.

The barrier properties against MOSH/MOAH have been verified and approved by the ifp Institute for Product Quality. The certificates were issued in February 2018 and are available on request.

ifp®
Institut für Produktqualität

Mineral Oil Barrier Packaging Films

Proven Protection against Mineral Oil Migration
Treofan Mineral Oil Barrier Packaging Films are perfectly suitable to protect food effectively against the migration of mineral oil residues (MOSH/MOAH) from packaging made of recycled and printed cartonboard.

General Product Features
- Excellent barrier to mineral oil protection for up to 128 weeks
- Protective barrier against water vapour and oxygen transmission
- Effective aroma barrier
- Water based coating
- Easy convertibility (printing and lamination)

Recommended Applications
- Dried foodstuff (pasta, rice e.g.)
- Cereals
- Confectionery
- Biscuits and bakery
- Tea

Product Overview: PVDC Coated Films

→ tested barrier function for up to 128 weeks

CLB Transparent Coated Film

Acrylic coated layer + Transparent core layer + PVDC coated layer
+ Excellent sealing properties and high seal strength
+ Outstanding hot tack
+ Consistent machineability on horizontal, vertical and overwrap packaging machines

CSQ Gloss Voided Coated Film

Acrylic coated layer + Voided core layer + PVDC coated layer
+ Excellent stiffness and opacity
+ High gloss acrylic surface
+ Consistent machineability on horizontal, vertical and overwrap packaging machines

CTS Transparent Coated Film

Special PVDC coated layer + Transparent core layer + Ultra low temperature seal coating layer
+ ULTSC face with a very wide heat sealing range
+ Excellent seal integrity in presence of contaminants
+ Specially designed for fin seal application (HFFS)

Product Overview: Acrylic Coated Films

→ tested barrier function for up to 64 weeks

CLG Transparent Coated Film

Acrylic coated layer + Transparent core layer + Acrylic coated layer
+ Excellent sealing properties and high seal strength
+ Outstanding hot tack
+ Consistent machineability on horizontal, vertical and overwrap packaging machines

CGQ Gloss Voided Coated Film

Acrylic coated layer + Voided core layer + Acrylic coated layer
+ Excellent stiffness and opacity
+ High gloss acrylic surface
+ Consistent machineability on horizontal, vertical and overwrap packaging machines

Additional Information & Services
Treofan's expert team for food safety and technical consultants work closely with our customers to develop new product solutions - in order to contribute to their success. For more information and consulting on Treofan's Mineral Oil Barrier Packaging Films please contact your responsible Treofan Sales Representative or the Treofan Food Safety Department under **foodsafety@treofan.com**.