ECMA Food Safety Committee
Web-meeting 22 November 2024

Participants : Michael Avemarg (Van Genechten Packaging), Sigrid Gerold (Mayr Melnhof Packaging), Carmine Iuvone (SEDA & Co-Chair FS Com), Julie Malaquin (Graphic Packaging), Eliza Konecka-Matyjek (WestRock), Helena Moring Vepsalainen (Metsa Group), Elaine Murray (WestRock), Carola Poggenpohl (Mayr Melnhof Packaging), Christian Schiffers (FFI), Annika Schrimpf (Graphic Packaging), Caroline Seguin (Mayr Melnhof Packaging), Mike Turner (ECMA MD & Co-Chair FS Com), Dorien van den Helm (Acket), Jan Cardon (ECMA)

Not participating : Ashleigh Pyatt (Alexir Packaging)

Suggested agenda

1. Introduction and welcome.
2. Approval minutes and short follow up from the FS Committee 26/09/24.
3. Tour de table on specific food safety concerns and developments.
4. Legal developments.
   - French MO measure on inks.
5. Sector project on appropriate testing conditions for cartons.
   - Outcome meeting with the EuPIA Analytical Team. (8/11)
   - Contacts with laboratories.
   - Required migration testing.
6. Migration from transport packaging.
7. Review food safety documents.
   - Checklist to use with customers.
   - Food safety declaration.
8. Update on sustainability related topics.
9. Miscellaneous.
   - Meeting calendar 2025.

1. Introduction - Welcome

ECMA anti-trust guidelines

SUMMARY DO NOT

- agree in writing or in any other way on prices or pricing policy
- agree to restrict any other commercial conditions
- agree with competitors to divide territories or customers (market sharing)
- limit or control production, technical development or investment
- discriminate between customers or suppliers
- discriminate in the rules for joining or leaving a trade association
- exchange specific information with competitors on individual purchasing prices, cost price structure, sales quantities or other trading conditions
- Jointly restrict the liberty of competitors to sell and promote products at independently determined prices and conditions.
- restrict the possibilities of competitors to use a common quality label or enter into standardisation agreements with competitors that might make entry for new commerce in the market more difficult.

2. Approval minutes and short follow up from the FS Committee 26/09/24.

- Discussion with Lionel Spack (See item 5)
  migration/extraction/exposure, Safety of natural components - allergens, DOC project at SVI/JIG, functionalized P&B complex (simplification in plastic sector), conditions and limits
- Tour de table
  France MO, PFAS, Transport packaging…
- Legal developments
  PFHxA, FAQ MO
- Review documents
- Sustainability : PPWR, Eco Design, EUDR

EUWID 40.2024 2/10)

EU ban on a group of PFAS chemicals concerns paper and board

Regulation will apply from 10 October 2026 following period of transition

By issuing Commission Regulation (EU) 2024/2462 of 19 September 2024, Brussels restricted the use of a sub-group of PFAS chemicals. In line therewith, the sale and use of undecafluorohexanoic acid (PFHxA) and PFHxA-related substances is prohibited. According to the EU Commission, these substances and the ammonium salt of PFHxA are frequently used in many sectors, with large quantities used e. g. for the production of paper and board functioning as food contact material.

3. Tour de table on specific food safety concerns and developments.

RASFF Window (15/09-19/11)

Type : food, food contact materials

Risk Hazard category : chemical contamination (other), environmental pollutants, heavy metals, industrial contaminants, migration

Reference	Category	Type	Subject	Date	Origin	Notifying	Classification	Decision
2024.8179	Fats and oils	food	High content of MOAH in Coconut oil	5 NOV 2024	---	Croatia	border rejection notification	potential risk
2024.8172	Fats and oils	food	High content of MOAH and glycidil esters in Coconut oil	5 NOV 2024	Indonesia	Croatia	border rejection notification	potentially serious
2024.8087	Fruits and vegetables	food	MOAH 3 ppm in fried garlic, from Thailand	31 OCT 2024	Thailand	Netherlands	alert notification	serious

2024.8036	Food contact materials	food contact material	Phtalates and lead in pizza box from Italy	30 OCT 2024	Italy	France	alert notification	serious
2024.7513	Cereals and bakery products	food	Mineral oil components (MOSH/MOAH) in rice from Pakistan via the Netherlands	11 OCT 2024	Pakistan	Germany	information notification for follow-up	potentially serious
2024.7243	Other food product / mixed	food	MOAH in rice protein from Belgium	1 OCT 2024	Belgium	Belgium	alert notification	potentially serious

23.5.2023 EN Official Journal of the European Union L 135/1

REGULATION (EU) 2023/988 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 10 May 2023

on general product safety, amending Regulation (EU) No 1025/2012 of the European Parliament and of the Council and Directive (EU) 2020/1828 of the European Parliament and the Council, and repealing Directive 2001/95/EC of the European Parliament and of the Council and Council Directive 87/357/EEC

Article 1

Objective and subject matter

1. The objective of this Regulation is to improve the functioning of the internal market while providing for a high level of consumer protection.

2. This Regulation lays down essential rules on the safety of consumer products placed or made available on the market.

Article 2

Scope

1. This Regulation applies to products that are placed or made available on the market insofar as there are no specific provisions with the same objective under Union law which regulate the safety of the products concerned.

Where products are subject to specific safety requirements imposed by Union law, this Regulation applies only to those aspects and risks or categories of risks which are not covered by those requirements.

With regard to products subject to specific requirements imposed by Union harmonisation legislation as defined in Article 3, point (27):

(a) Chapter II does not apply insofar as the risks or categories of risks covered by Union harmonisation legislation are concerned;

(b) Chapter III, Section 1, Chapters V and VII and Chapters IX to XI do not apply.

2. This Regulation does not apply to:

(a) medicinal products for human or veterinary use;

(b) food;

(c) feed;

(d) living plants and animals, genetically modified organisms and genetically modified microorganisms in contained use, as well as products of plants and animals relating directly to their future reproduction;

(e) animal by-products and derived products;

(f) plant protection products;

(g) equipment on which consumers ride or travel where that equipment is directly operated by a service provider within the context of a transport service provided to consumers and is not operated by the consumers themselves;

(h) aircraft referred to in Article 2(3), point (d) of Regulation (EU) 2018/1139;

(i) antiques.

…

SAFETY REQUIREMENTS

Article 5

General safety requirement

Economic operators shall place or make available on the market only safe products.

Article 6

Aspects for assessing the safety of products

1. When assessing whether a product is a safe product, the following aspects in particular shall be taken into account:

(a) the characteristics of the product, including its design, technical features, composition, packaging, instructions for assembly and, where applicable, for installation, use and maintenance;

(b) the effect on other products, where it is reasonably foreseeable that the product will be used with other products, including the interconnection of those products;

(c) the effect that other products might have on the product to be assessed, where it is reasonably foreseeable that other products will be used with that product, including the effect of non-embedded items that are meant to determine, change or complete the way the product to be assessed works, which has to be taken into consideration when assessing the safety of the product to be assessed;

(d) the presentation of the product, the labelling, including the labelling regarding age suitability for children, any warnings and instructions for its safe use and disposal, and any other indication or information regarding the product;

(e) the categories of consumers using the product, in particular by assessing the risk for vulnerable consumers such as children, older people and persons with disabilities, as well as the impact of gender differences on health and safety;

(f) the appearance of the product where it is likely to lead consumers to use the product in a way different to what it was designed for, and in particular:

(i) where a product, although not foodstuff, resembles foodstuff and is likely to be confused with foodstuff due to its form, odour, colour, appearance, packaging, labelling, volume, size or other characteristics and might therefore be placed in the mouth, sucked or ingested by consumers, especially by children;

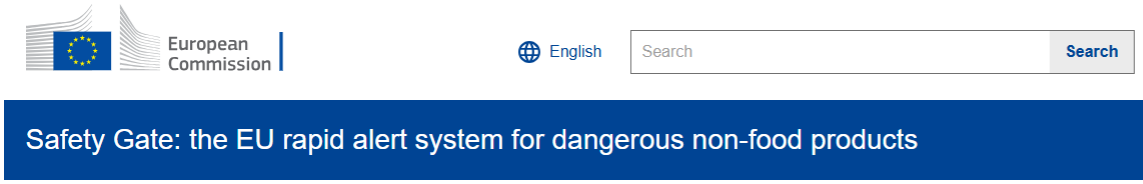
(ii) where a product, although neither designed nor intended for use by children, is likely to be used by children or resembles an object commonly recognised as appealing to or intended for use by children because of its design, packaging or characteristics;

(g) when required by the nature of the product, the appropriate cybersecurity features necessary to protect the product against external influences, including malicious third parties, where such an influence might have an impact on the safety of the product, including the possible loss of interconnection;

(h) when required by the nature of the product, the evolving, learning and predictive functionalities of the product.

2. The feasibility of obtaining higher levels of safety or the availability of other products presenting a lesser degree of risk shall not constitute grounds for considering a product to be a dangerous product.

Union Rapid Information System (RAPEX)



Application date : 13/12/2024

July 25, 2024

Exciting updates on the publication of Packaging Materials Issue 7

In December 2023, BRCGS formally launched the revision of Global Standard Packaging Materials. The revision process was comprehensive and robust, and to comply with GFSI benchmark requirements it was essential that the correct stakeholders with the relevant expertise from across all sectors in the packaging supply chain are part of the process. Over the past six months, we have worked in collaboration with a Technical Working Group of stakeholders from the packaging industry including, Certification Bodies, Accreditation Bodies, retailers and industry trade bodies, to ensure that the evolution of our packaging standard incorporates latest industry trends and operations, practical experiences and best practices, and changing customer and regulatory expectations.

Issue 7 of the Standard was made available for global public consultation in May/June. This stage of the process is where the draft requirements of the standard and the audit protocol are made available for public comment and feedback. During the 34-day period we were pleased to receive over 400 comments! All comments have now been considered internally by BRCGS and the Technical Working Group, and the draft has been reviewed and amended in line with industry current and future needs.

We would like to take this opportunity to thank those who took the time to read and review the documents made available in this important stage of the process. We are not able to contact each respondent individually, but your input, suggestions and support has been invaluable in developing a standard that is fit for the current industry and delivers value to those who rely on it throughout the supply chain.

We are pleased to confirm that this concludes the review and revision process for Issue 7, and the Standard is now in the publication process. **BRCGS Global Standards Packaging Materials Issue 7 will be launched on 28 October 2024.** From this date, Issue 7 will be available for download from Participate and for purchase from the BRCGS Store.

There will be a six-month transition period for sites and auditors to review the standard, complete training and prepare before the first audits are performed. Therefore, **Global Standards Packaging Materials Issue 7 audits will commence on 28 April 2025.**

We are now working hard behind the scenes to prepare training material, guidance and support publications for the launch. Further details will be communicated as we near the launch date.

4. Legal developments.

French MO measure on inks.

After a first introduction phase starting in January 2023 which set a 1% limit for the presence of Mineral oil aromatic hydrocarbons (MOAH) in inks, from January 2025 the limits will become more demanding with inks used for packaging from 1/01/25 banned if:

- for the MOAH the mass concentration is above 0,1% or if the mass concentration for the most harmful MOAH fraction (3-7 aromatic rings) is above 1 part per million (0,0001%).
- for the Mineral oil saturated hydrocarbons, inks should not contain MOSH (with 16 to 35 carbon atoms) in a mass concentration above 0,1%.

Statement 17/10

Call for urgent clarification, between ink suppliers, laboratories, authorities.
Without carton makers in an uncertain operational context….
Compliance inks needs to be based on accurate regulatory statements in the supply chain.

Mails with French authorities. (12/10, 16/10, 28/10)

Obtained reply 28/10 (translated) :

For your information, discussions have been taking place since the summer with the mineral oil sector (manufacturers and users) with a view to finding an acceptable solution for the January 2025 deadline. Proposals have been received from the industry and are currently being examined internally. The subject is being followed up in particular by the sub-directorate in charge of waste and the circular economy within our department.

Olivier GRAS
Head of Office SRSEDPD/SDSEPCA/BPC
Risk Prevention Department

Mails with CAP and Club MCAS (25/10, 28/10)
Translated replies :

For the moment, there are no particular application problems for the paper and cardboard packaging sector:
The federation of ink manufacturers (European or French) is lobbying hard, but for the graphic sector (newspapers),
*The texts do not require packaging to be inspected, but an attestation from the ink supplier that it does not **intentionally** use MOSH and MOAH in its inks. Moreover, the CTP knows how to measure these levels.*

On the other hand, there are now regulations governing MOSH and MOAH content in foodstuffs. If these levels are exceeded, they must be withdrawn from the market. If our packaging contains a high level of MO, there's a good chance that these thresholds will be reached.

Philippe de Boisgrollier
General Delegate CAP

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from the processor's point of view, all they need is a declaration from their ink supplier certifying that the ink complies with the requirements of the regulations and that no mineral oils are used in its manufacture (there are no mineral oils in its composition, so no intentional use). Control after printing is difficult to carry out because the packaging may contain MO from other sources (recycled, adhesives, etc.). There are no regulations setting thresholds for packaging (outside the Council of Europe) but there is a 'SCoPAFF statement' food regulation (for information, a draft EU recommendation is attached for monitoring, which will have an impact on packaging). As announced, we are drafting an information note.

Noël MANGIN
General Delegate Club MCAS

Detailed note circulated by the German Food Industry Federation.

- Review FCM legislation
- BPA regulation
- Council of Europe TG on information exchange.

…

Länderarbeitsgemeinschaft Verbraucherschutz
Arbeitsgruppe Lebensmittel- und Bedarfsgegenstände, Wein und Kosmetika (ALB)

LEBENSMITTELVERBAND Deutschland

Beurteilung von Mineralölkohlenwasserstoffen (MOH) in Lebensmitteln

Erläuternde Hinweise zur EFSA-Stellungnahme und zur Gemeinsamen Erklärung der EU-Mitgliedstaaten im SCoPAFF

I. Hintergrund

Das Vorkommen von Mineralölkohlenwasserstoffen (MOH) in Lebensmitteln beschäftigt seit Jahren die Analytik, die Wirtschaft entlang der gesamten Lieferkette, die Überwachung und die Wissenschaft. MOH und analoge Verbindungen finden sich insbesondere in zusammengesetzten, verarbeiteten und verpackten Lebensmitteln als Ergebnis eines komplexen Eintragsgeschehens von Mineralölspuren oder mineralölbasierten Produkten und chemisch ähnlichen Verbindungen aus sehr unterschiedlichen Quellen auf allen Stufen der Prozessketten. Als MOH werden nach derzeitigem Verständnis definierte Fraktionen von Mineralölkohlenwasserstoffen und chemisch eng verwandten Stoffen mit 10 bis 50 Kohlenstoffatomen zusammengefasst, wobei zwischen gesättigten Mineralölkohlenwasserstoffen (mineral oil saturated hydrocarbons = MOSH) und aromatischen Mineralölkohlenwasserstoffen (mineral oil aromatic hydrocarbons = MOAH) mit 1-7 Ringsystemen unterschieden wird.

Seit mehreren Jahren werden nahezu alle betroffenen Bereiche der Urproduktion sowie der Lebensmittel- und Verpackungsherstellung die Guten Herstellungspraktiken (GHP) analysiert und verbessert, um Einträge von MOH zu reduzieren. Dies wird durch einschlägige Analyseergebnisse im Zeitraum von 2008/2009 bis heute u. a. mit Daten der Wirtschaft, verschiedener Warentester sowie der Lebensmittelüberwachung belegt und durch die Europäische Behörde für Lebensmittelsicherheit und die EU-Kommission bestätigt.

II. Risikobewertung von MOSH und MOAH durch EFSA (2023)

Die Risikobewertung von MOH durch die Europäische Behörde für Lebensmittelsicherheit (European Food Safety Authority – EFSA) erfolgte zuletzt 2012 und wurde 2023 aktualisiert. Im Ergebnis liegt der Fokus im Risikomanagement primär, jedoch nicht ausschließlich auf den Fragen der Toxikologie und der Exposition der Verbraucher mit MOAH sowie der quellenunabhängigen Feststellung und Beurteilung von MOAH-Befunden. Damit wird den neuen, differenzierten wissenschaftlichen Einschätzungen von MOSH und MOAH Rechnung getragen [1].

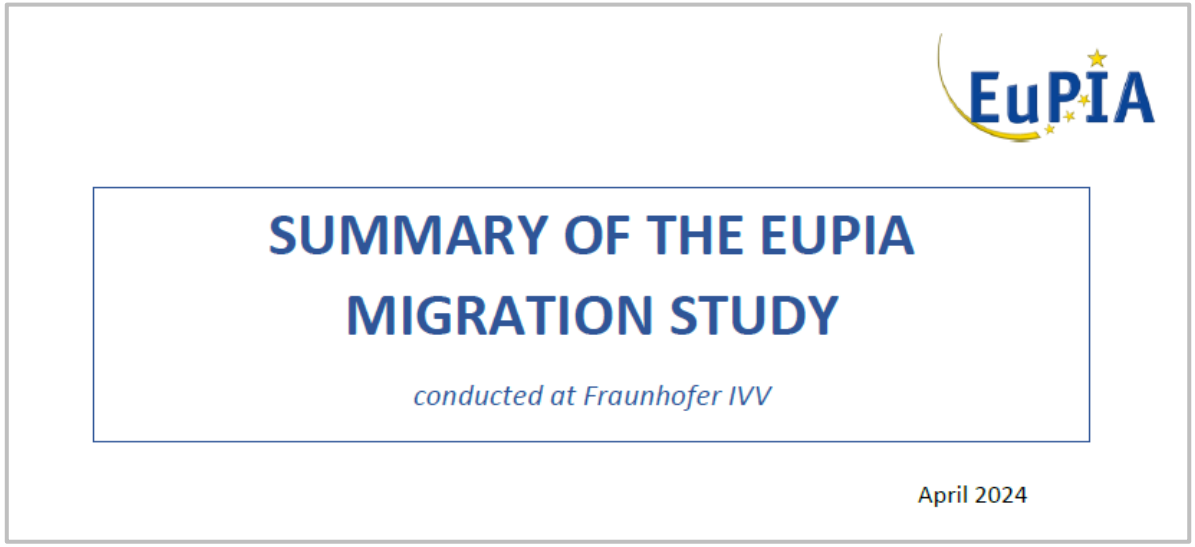
Gesättigte Kohlenwasserstoffe (MOSH) des Kettenlängenbereichs zwischen 10 und 46 C-Atomen werden vom menschlichen Körper aufgenommen und können in einigen Organen und Fettgewebe nachgewiesen werden (n-C20 bis n-C46). Die EFSA kommt jedoch zu dem Ergebnis, dass die aktuelle Aufnahmemenge in der europäischen Bevölkerung über Lebensmittel über alle Alters- und Verzehrgruppen hinweg keinen Grund zur Besorgnis darstellt und schätzt die akute Toxizität als gering ein.

Für die Bewertung der MOAH-Gehalte in Lebensmitteln ist aus Sicht der EFSA die Fraktion mit drei oder mehr aromatischen Ringen besonders relevant, da bei bestimmten, insbesondere wenig alkylierten 3-7 Ringsystemen genotoxische und krebserzeugende Wirkungen nicht auszuschließen sind. Zur kompletten Risikocharakterisierung sind weitere Daten zur Toxizität der in der MOAH-Fraktion enthaltenen 3- und Mehrring-MOAH und zur Exposition gegenüber diesen, sowie insbesondere auch zur oralen Toxizität für MOAH mit 1-2 Ringen erforderlich. Die Technischen Spezifikationen von Weißölen und Wachsen sollten aus Sicht der EFSA ergänzt werden mit Angaben zum Gehalt und der Zusammensetzung von MOAH. Zudem betont die EFSA das Erfordernis, spezifische Analysenmethoden zur Erfassung der ≥ 3-Ring-Systeme zu entwickeln und für die Routine verfügbar zu machen.

5. Sector project on appropriate testing conditions for cartons.

Outcome meeting with the EuPIA Analytical Team. (8/11)

Participants
EuPIA : Natasha Banke (INX), Werner Oechsle (Huber-Chair Analytical WG), Cornelia Tietz (Director EuPIA), Christof Walter (Food Contact Manager EuPIA)
ECMA : Sigrid Gerold, Eliza Konecka-Matyjek, Caroline Seguin, Dorien van den Helm, JC



Surrogates used.

Table 1: Overview of representative surrogates for printing ink components

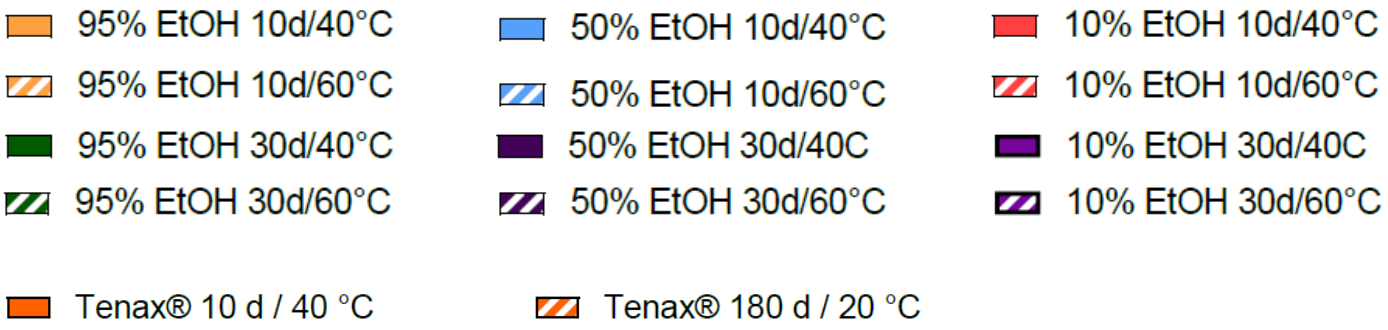
Surrogate	Molecular Weight (g/mol)	Log $P_{o/w}$
Irgacure 184 (CAS 947-19-3)	204.3	2.34
Di-tert-butylhydroxytoluene BHT (CAS 128-37-0)	220.4	5.32
Irganox 1076 (CAS 2082-79-3)	530.9	13.9
2,4,7,9-Tetramethyl-5-decin-4,7-diol (TMDDO) (CAS 126-863)	226.4	3.11
Hexadecane (C16) (CAS554-76-3)	226.6	9.26
Octadecane (C18) (CAS 593-45-3)	254.5	10.3
Eicosane (C20) (CAS 122-95-8)	282.5	11.4
Docosane (C22) (CAS 629-97-0)	310.6	12.4
Tetracosane (C24) (CAS 646-31-1)	338.7	13.5
The following surrogates are removed from the overall data set due to experimental inconsistences cited in the original report:		
Di(trimethylolpropane)tetraacrylate (DiTMPTA) (CAS 94108-97-1)	466.5	4.26
2-Phenoxyethyl acrylate (CAS 48145-04-6)	192.2	2.71
Acetyltributylcitrate ATBC (CAS 77-90-7)	402.5	6.92
2-Ethylhexanol (CAS 104-76-7)	130.2	2.82
Erucamide ESA (CAS 112-84-5)	337.6	8.87
Dodecane (CAS 112-40-3)	170.3	7.13
Benzophenone (CAS 119-61-9)	182.2	3.18
2-Methylpropane (CAS 2163-42-0)	90.1	0.24

Thick layer 8µ applied by screen printing.
Representative for a normal ink, for sheetfed offset printing inks ?

Focus in study on plastic

Simulants used

OPP 50 µm



Cardboard 240 g/m²

4.2. Cardboard (all surrogates)

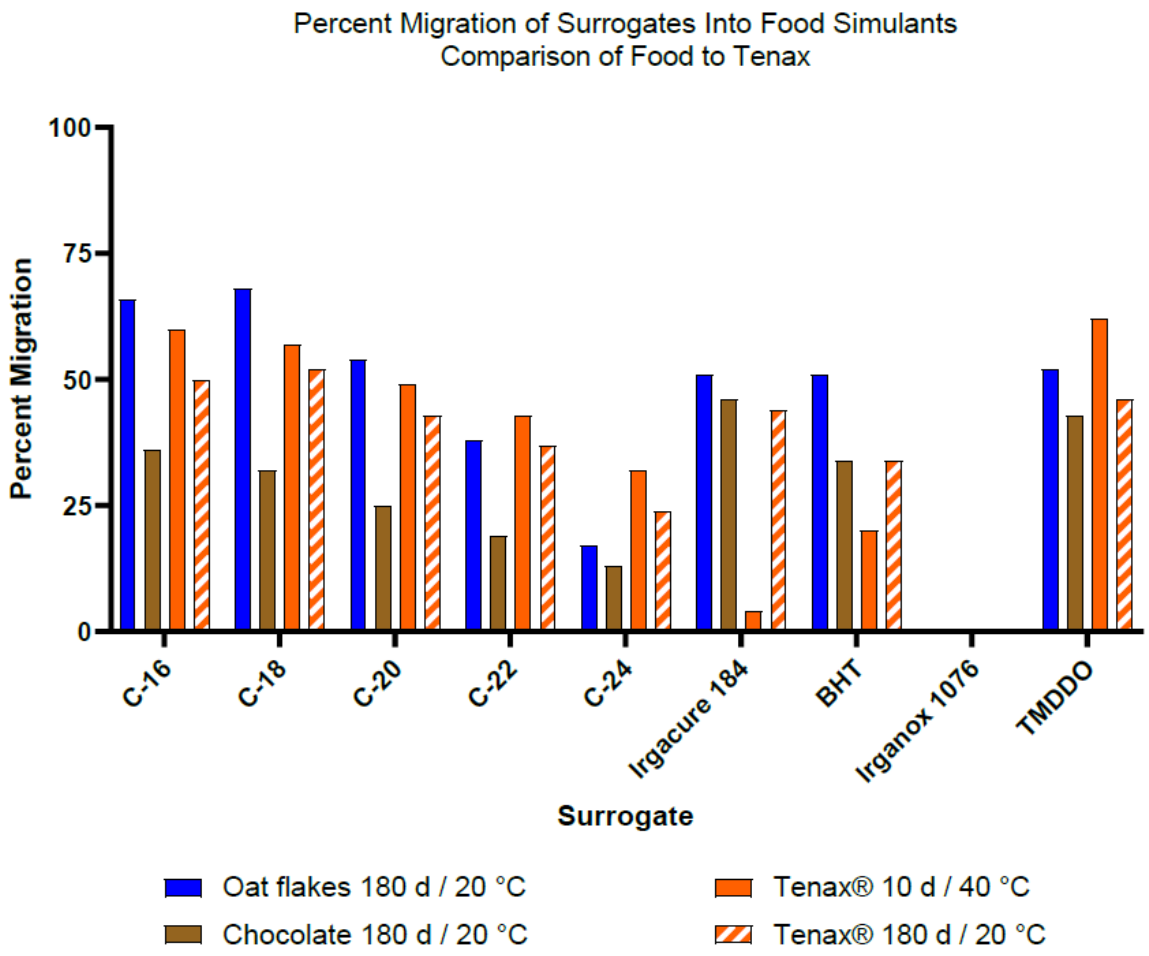


Figure 7: *Comparison of migration for all surrogates from printed cardboard onto Tenax®, oat flakes and chocolate under defined test conditions*

Outcome study not favorable for cardboard.
Reason for a that high migration into oat flakes ?

- Equilibration reached with 30d @ 40°C ?

  Study by Fraunhofer, Munich and Darmstadt on paper migration and modelling.

  Kick off paper publicly available.

  Internal EuPIA study on UV inks. (10/30/60 days @ 40°C compared to 10 days @ 60°C)

- Meeting 02/24 with Mike Simoni.

  10 days @ 40°C covers up to 6 months

  30 days @ 40°C up to 1 year.

  Expert opinion 1-3 years ?

  For the chemicals present in Huber inks, 30 days/40°C is a good compromise for LT @RT.

- Confirmation carton maker can be compliant. Based on which conditions ?

  Huber : 10d/60°C -> 30d/40°C

- Can it be expected from ink suppliers to share appropriate testing conditions?

  Huber : Is present in migration testing guidance document.

  EuPIA : Further compliance work by the customer according to own guidance.

- Tenax 30d/40°C for 1 year-15 months ?

  Huber : Correct. Further tests and studies are done with SQTS.

- <u>Comments from laboratories ?</u>

  The 60°C problem is known. They just test in accordance with the customer requests.

- <u>What about cartons with a plastic layer</u> ?

  In case of physical changes allowed to use other testing conditions. (40°C)

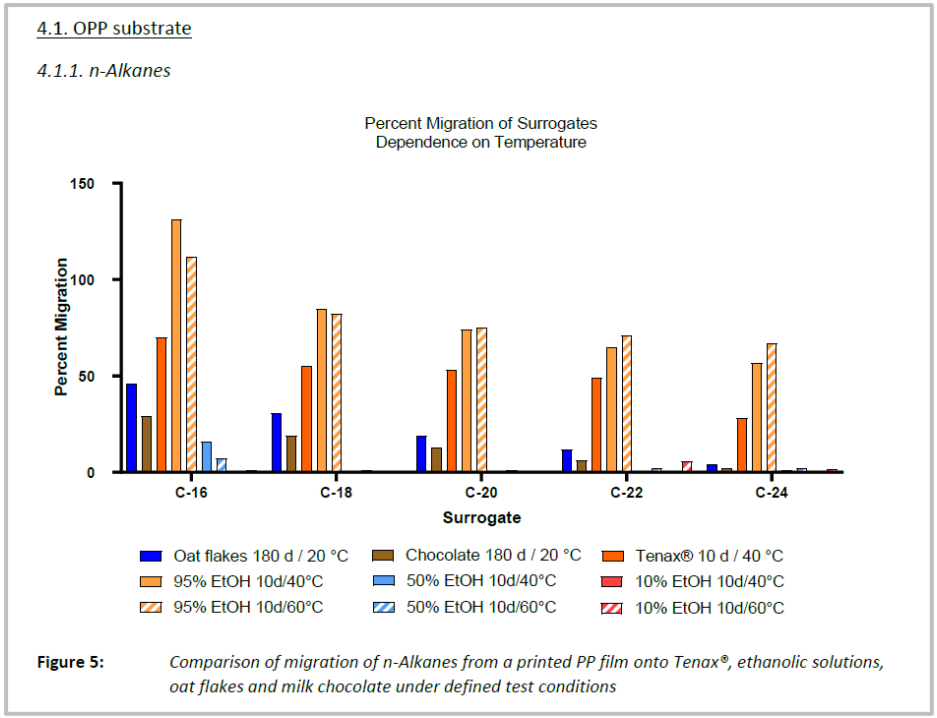


Figure 5: *Comparison of migration of n-Alkanes from a printed PP film onto Tenax®, ethanolic solutions, oat flakes and milk chocolate under defined test conditions*

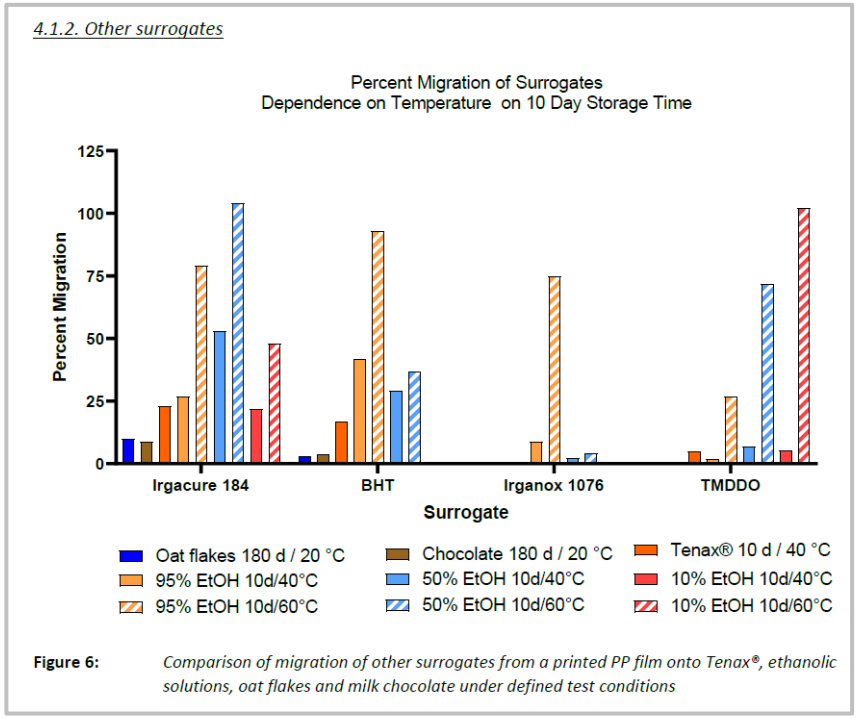


Figure 6: *Comparison of migration of other surrogates from a printed PP film onto Tenax®, ethanolic solutions, oat flakes and milk chocolate under defined test conditions*

Questions yo add in the supplier questionnaires ?

Contacts with laboratories.

ISEGA
Forschungs- und Untersuchungs-
Gesellschaft mbH Aschaffenburg

With regard to your inquiry about the test conditions for finished cartons for food packaging at room temperature, we can inform you that we also carry out the examinations at 40°C. For the reasons you have already mentioned, test temperatures above 40°C are considered unsuitable for paper and board.

Generally, a testing time of 10 days is sufficient for most carton structures. For special structures, like barrier-coated cartons, the technical specification DIN SPEC 5010:2018 can be considered, which is also used as a reference in the EuPIA migration study. This technical specification was co-written by ISEGA and will be converted into a European standard in the future. It is based on a broad data basis and represents the current state of science and technology regarding the testing conditions for migration analysis with MPPO of barrier coated papers and boards for food contact.

As given in the specification, the test condition of 10 days/40°C can be used in order to assess a food contact of up to 12 months at room temperature, whereas the test condition of 30 days/40 °C covers a food contact of up to 24 months at room temperature.

As food simulant we use MPPO as we haven´t made good experience with infant milk powder which is mentioned as alternative in the ECMA statement.

DIN specification 5010/2018 is on MO
Broad database, for setting the conditions 10d 40°C for up to 1 year and 30d 40°C for 1-2 years, covering other substance categories ?
Any restrictions in relation to the composition of finished cartons ?

Required migration testing.

Agreed proposal discussed with Lionel Spack :

. A common testing project on a few samples to validate appropriate testing conditions for regular cartons LT @ RT.
. Testing done at Nestlé.
. Consultation with ISEGA.
. The development of a common statement (Food Industry - ECMA)

Status

- Nestlé ?
  Samples ? Confectionary … categories … composition.
- Test results available from other sources ?
- Unclear to which extent Nestlé prepared to cover all costs. Budget ?

- Preliminary update statement based on expert opinion and existing publications.

6. Migration from transport packaging.

Excerpt
Presentation in ECMA Technical Committee
6th September 2016 Dresden

TECHNISCHE UNIVERSITÄT DRESDEN

Professur für Lebensmittelkunde und Bedarfsgegenstände

Compliant folding box for a breakfast cereal

Project
(TU Dresden, KLZH, Food Producer)

Project

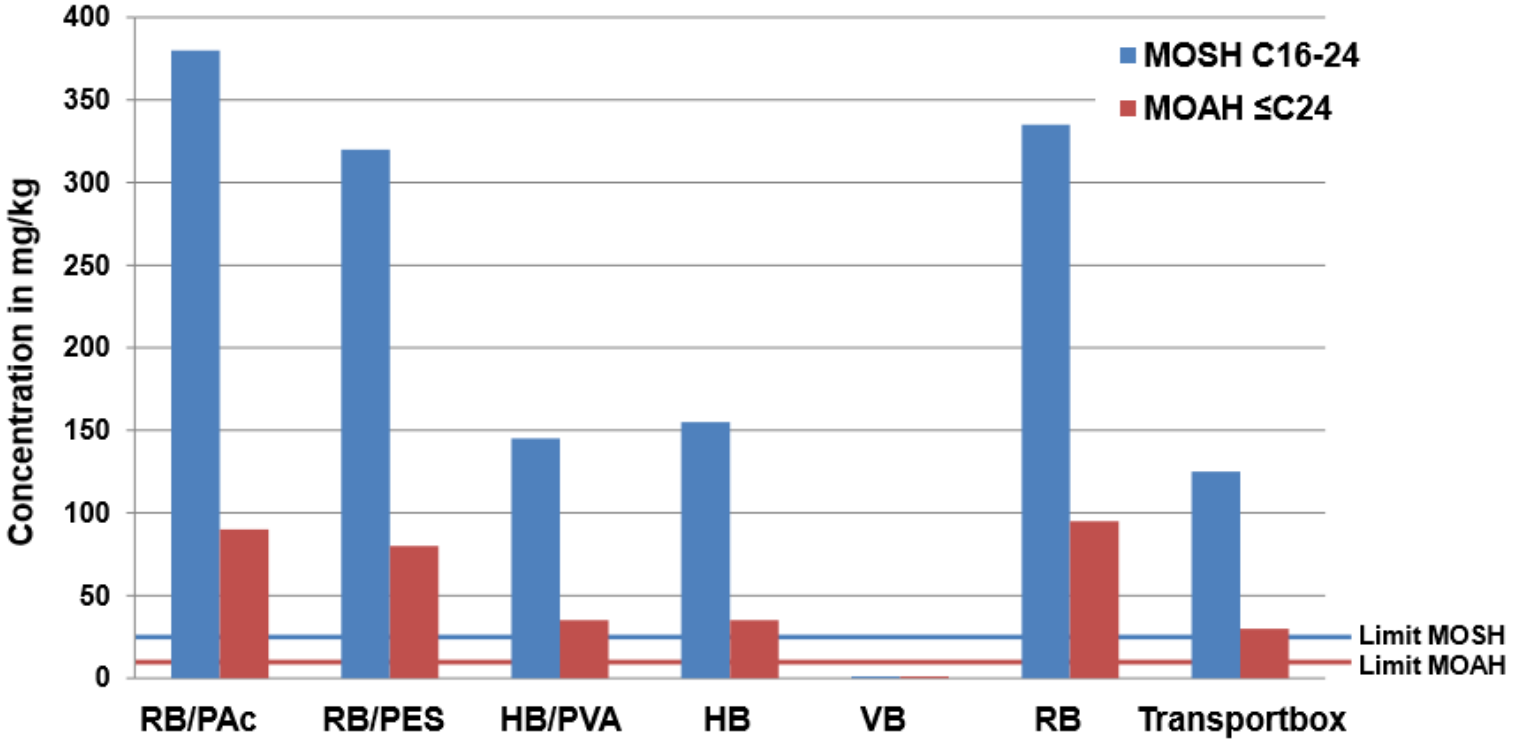
– Packed Food:

- breakfast cereal
- About 500g cereal packed in 8 dm² of cardboard packaging 16 dm²/kg food
- 20 boxes in a corrugated board transport carton wrapped in aluminium foil, gaps after sampling

Project

Initial Amounts of MOSH/MOAH

– Results



Project
Characterisation of the materials

– Cardboard box types:

Abbr.	construction	Barrier application
RB	Recycled fiber board	-
HB	Hybrid board (rec. and virgin fiber)	-
VB	Virgin fiber board	-
RB/PAc	Rec. Board/6-8µm polyacrylate	flexo printing coating
RB/PES	Rec. Board/5µmPE/4µmEVA/7µmPES	Extrusion coating
HB/PVA	Hybrid Board/5µmPVA	coating
RB/AC	Rec. Board (activated carbon)/2µm PVA	AC layer, coating

Disclaimer

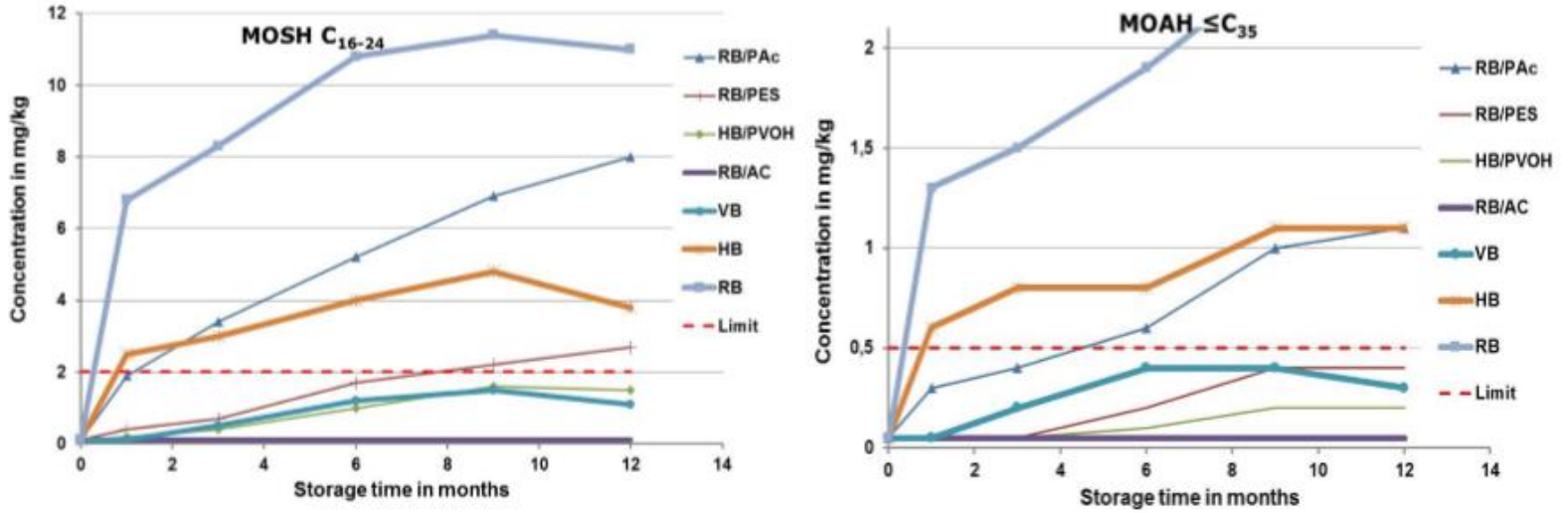
- presented results only refer to the materials prepared for this storage test
- some barrier systems may provide better properties when prepared differently

Project

Cereal Storage Test (12 months)

– Compliance with future limits of MO-Regulation ?

- MOSH **C_{16-35}**: 2.0 mg/kg MOAH ≤C_{35}: 0.5 mg/kg

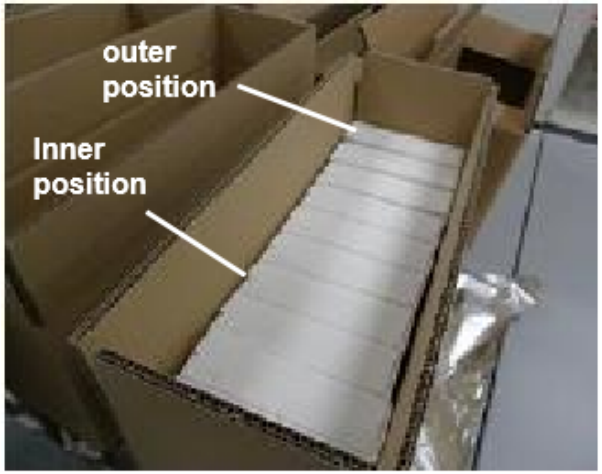


→ non-compliant: RB, RB/PAc, HB (RB/PES)

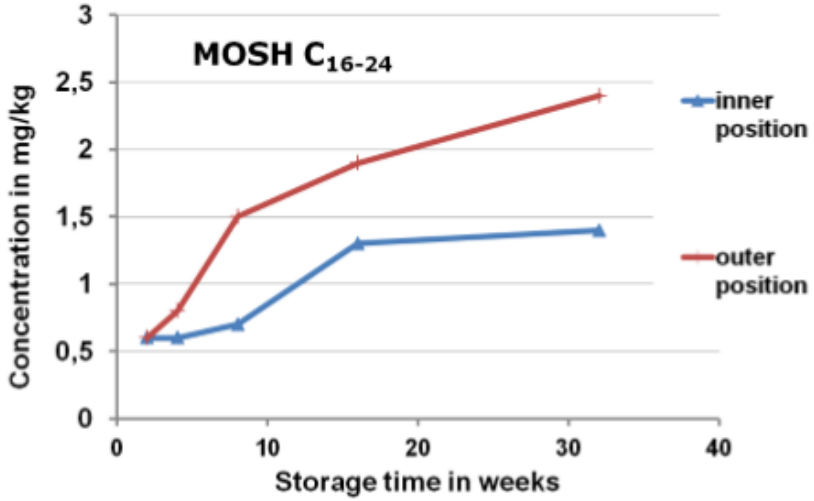
→ compliant: **RB/AC**, HB/PVOH, VB, (RB/PES)

Contamination of Food in virgin fiber boxes with MOH?

- **A. Kersten et al. (2015)**
  TU Darmstadt/ISEGA: INFOR 148
- Virgin fiber boxes filled with food (ca. 400 g) in corrugated board transport cartons
- Inner and outer position of boxes in transport carton



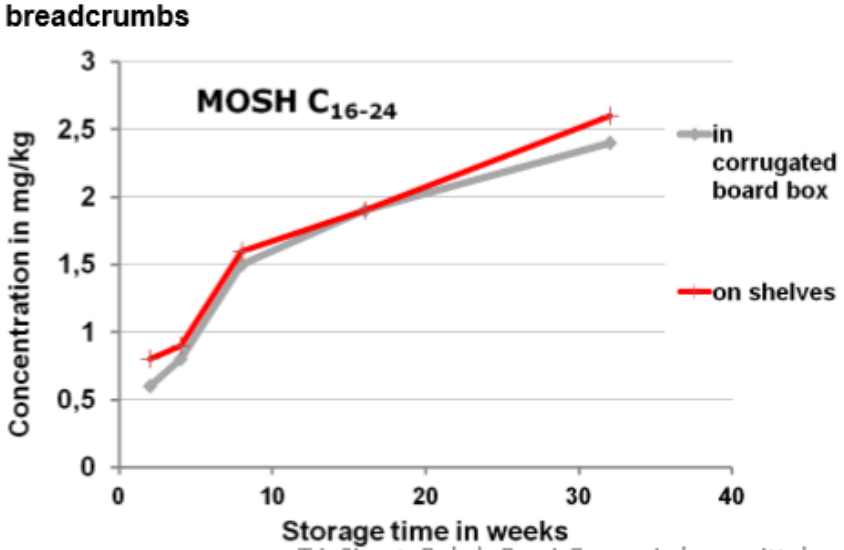
breadcrumbs

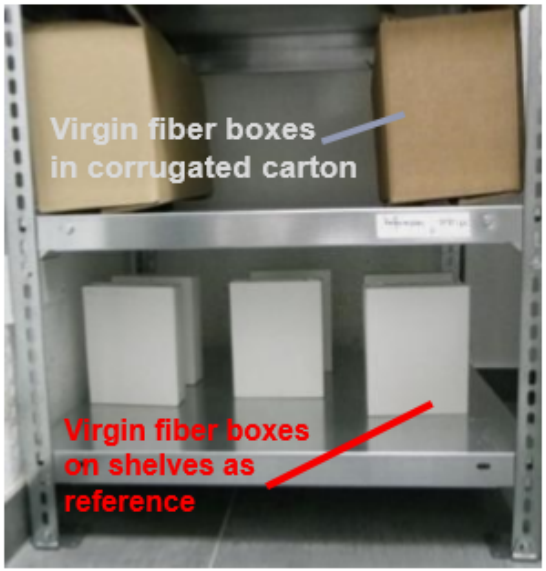


- **Clear proof for MOSH migration from corrugated board** into virgin fiber packaging
- Migration depends on position of the packaging, time, food type

Contamination of Food with MOH by shop environment?

- **A. Kersten et al. (2015)**
  TU Darmstadt/ISEGA: INFOR 148
- Virgin fiber boxes filled with food (ca. 400 g) in corrugated board transport cartons
- Reference:
  Virgin fiber boxes filled with food stored on shelves





‚Reference contaminated from external environment‘
(ISEGA climate room)

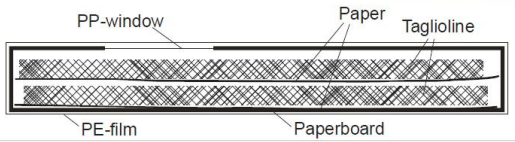
Koni Grob - Zurich “History of the case,
point of view of an enforcement laboratory” (2011)

Summer 2010: Transport boxes

Most foods are transported and stored in larger boxes

- also products packed in paper or plastic
- mostly of corrugated board, largely consisting of recycled board

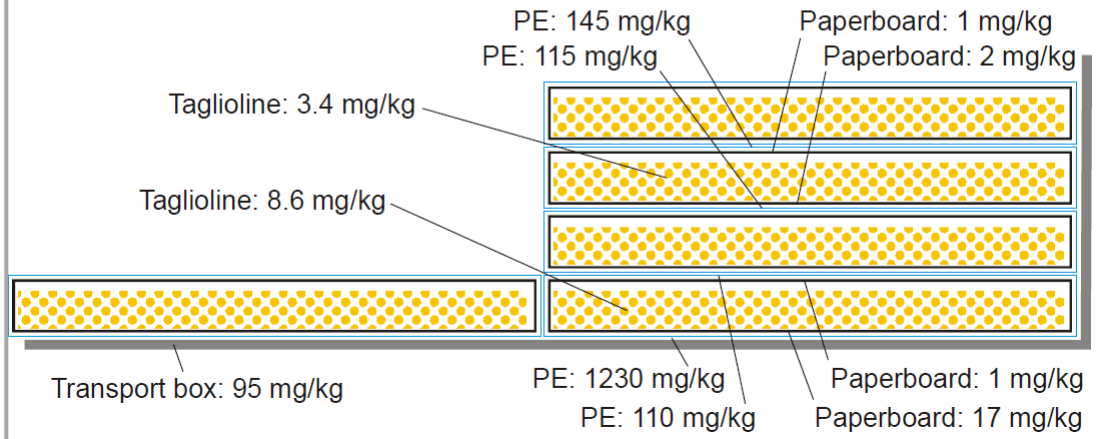
Example: taglioline (noodles) in fresh fiber board with clean ink



Migration from transport box after 65 days

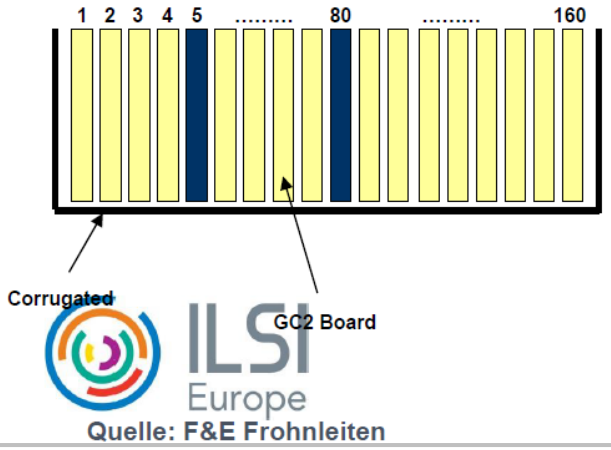
Taglioline contained 2.5 mg/kg MOSH before packing

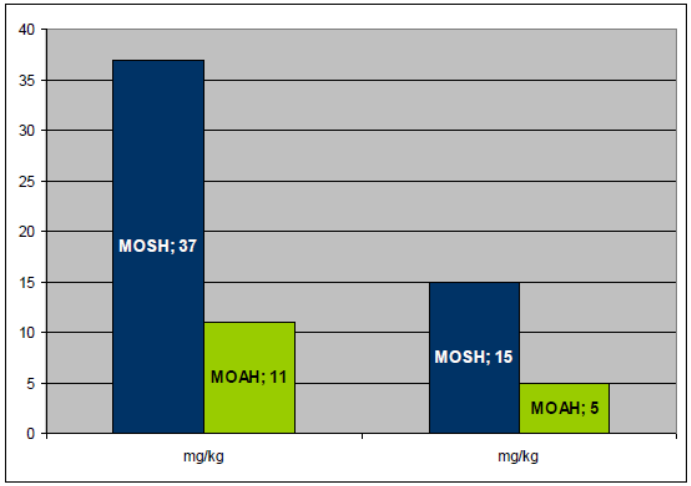
- bottom pack: 6.1 mg/kg, center pack: 0.9 mg/kg
- mean contamination: 3.0 mg/kg
- Potential, mean of all packs: 10.3 mg/kg



Cross-Contamination

160 printed boxes of GC board were stored for 2,5 month in a corrugated box





Box No. 5 1,6 mg MOAH / kg

Box No. 80 0,8 mg MOAH / kg

Required actions ?

7. Review food safety documents.

Checklist to use with customers.

Review Checklist to use with customer	
Checklist for materials & articles made from cardboard that are intended to come into contact with food (Developed by FFI - adopted by ECMA)	
Version 2 April 2015	Comments
Version 2 April 2015	Version 3 December 2024
Preliminary remarks	
Note for the reader	
This is the second version (V2.0) of the FFI checklist for materials & articles made from board that are intended to come into contact with food. For a use at European level, the checklist was adopted in the ECMA Technical Committee the 2 April 2015. Comments on the checklist and suggestions for improvements are very welcome.	This is the third version (V3.0) of the checklist for materials & articles made from board that are intended to come into contact with food. Comments on the checklist and suggestions for improvements are very welcome.
Disclaimer	
The FFI has done everything in its power to make sure that the information in this document is correct. FFI and ECMA do not assume any liability for business decisions that are taken on the basis of the contents of this document. Such decisions remain the sole responsibility of those who use the information.	FFI and ECMA have done everything in their power …

1. Questions about the (food) product packaged

1.1 Details about the product packaged	
1.1.1 The product has the following consistency when it is packaged: O solid O grated O liquid O pasty O optional description: } Mass [g] or volume [dm³]:	
1.1.2 The product packaged has the following properties (more than one answer is possible): O dry (Moisture content < 10%) O moist Water content in%: O fatty Fat content in %: O optional description:	[AS] Add the option „alcoholic“ with the addition of the %-content, and add the option acidic with the addition of the pH-level
1.1.3 Does the product have any other (chemical) properties? If so, which ones? (e.g. sensitive to oxidation, acid/alkaline, sensitive to heat/cold ...)	[AS] As above, I would add the option for acid above, we had experiences with customers where we could not use certain boards, due to the low pH-level of their product, but only finding out during the project

1.2 Processing of the product packaged	
1.2.1 Short-time O hot contact O fat contact at the following temperature: for what approximate time:	
1.2.2 Is the product frozen? O Yes O No	
1.2.3 Filling temperature:	
1.2.4 Description / additional information about the filling/packaging or treatment process at the customer's site:	Proposal to add in radiation and sterelisation.

1.3 Analysis of the migration risk	
Is the product protected directly against packaging influences (absolute or functional barrier, e.g. glass, aluminium foil > 8 µ)?	
O Yes O No	
O It is not known whether there is an absolute or functional barrier (=> obtain information from the customer / manufacturer if necessary)	
=> If so, please give as precise a description as possible and/or provide an appropriate data leaflet:	
1.3.1 Is a further inner pack / bag provided between the product packaged and the folding carton?	
O Yes O No	
=> If so, please give as precise a description as possible:	
1.3.2 Does the product packaged come into direct physical contact with the folding carton?	
O Yes O No	
1.3.3 Is the (food) product packaged (generally) consumed entirely by the consumer after the pack has been opened or does some of the product remain in the pack after it has been opened?	[AS] It is a „this OR that" question, which can only be answered by yes or no. Better to ask first: „Is the (food) product packaged (generally) consumed entirely by the consumer after the pack has been opened?" Yes or No; and then ask as a second question: „Does some product remains in the pack after it has been opened?"
O Yes O No	
In what form, additional information:	
1.3.4 How long is the planned maximum storage time in months for the product packaged, according to the manufacturer's recommendation ("use by" date)?	Proposal to add an indication on the storage time before filling.

3.2 Specifications / customer's requirements	
3.2.1 Has a specification been provided by the customer ?	
O Yes O No	
=> If not, obtain specifications or compile them and have them confirmed by the customer!	
Comments:	
3.2.2 Have they been checked, approved and confirmed by the parties as part of the contract?	
O Yes O No	
=> If not, obtain specifications or compile them and have them confirmed by the customer!	
Comments:	
3.2.3 Does the customer have any directives / specifications about the production of the materials and articles that are intended to come into contact with food? (e.g. supplier's guide, quality expectations, ...)	Proposal to add : other specefic requirements : Halal, Kosher, Vegan.
O Yes O No	
O Unknown	
=> If so, what are they?	

4. Materials used / design			
4.1 Materials used, palletisation, transport			
4.1.1 Board: grade used (manufacturer, board designation / grammage):			
	O Virgin fibre	O Recovered fibre (including partial)	? + Barrier board, plastic coated board, …
	O Other	O Comments:	
4.1.2 Inks: inks that the customer says can/must be used for the packaging:			? (EuPIA classification for food contact) : FCM ink for non-Direct food contact (Non-DFC inks),
	O Low migration	O Mineral oil-free (< 0.1 % acc. to the manufacturer's certificate)	FCM ink for Direct Food Contact (DFC ink).
	O Conventional	O UV	
	Other:		
4.1.3 Which printing process is used?			
	O Offset	O Gravure	
	O Flexo	O Other:	
4.1.4 Lacquers: lacquers that the customer says can/must be used for the packaging:			
	O Low-migration	O Mineral oil-free (< 0.1 % acc. to the manufacturer's certificate)	
	O Conventional	O UV	
	Other:		
4.1.5 Adhesives: adhesives that the customer says can/must be used for the packaging:			? (FEICA discussion) Water-based dispersion, Hotmelts, Others
	O Dispersion	O Hotmelt	
	O Low-migration	O Other:	

4.1.6 Use of hot foil?			
	O Yes	O No	
	Comments, to what extent:		
4.1.7 Use of window / film?			
	O Yes	O No	
	Product used:		
	Comments:		
4.1.8 How is the packaging to be shipped on the pallet etc.?			
	O Blanks on the pallet	O In cartons on the pallet	
	Other / description:		
4.1.9 Shipping cartons			
	O Standard product	O Special product	
	Other / description:		
4.1.10 Further transport packaging			Protecting layer ?
	O Shrink film	Material:	
	O Stretch film	Material:	
	O Other	Material:	
4.1.11 Any other special features of the materials used or other materials required or comments about the design			

Food Contact Status Declaration

A simulant based (*) targeted analysis was performed on the finished carton or individual components for the following substances :

Substance name	CAS No

(*) Only the final food customer can test the overall packaging concept with a sample of the packed food.

Our company controls on the sensoric properties of the delivered cartons, are limited to a generic observation of off odour and taint on raw materials deliveries, quality control operations, transport vehicle inspections and the likes as these are described in the pre-requisite programs of hygiene standards (BRC Packaging Issue 5 or equivalent).

[AS] A lot of customers are asking if specific substances are used/not contained in the product (e.g. Heavy metals, PFAS, MOSH & MOAH, Phthalates, etc.) Maybe it would be good to add an optional chapter here, where these subtances can be mentioned like: „Based on our suppliers statement the mentioned substance is not intentionally added in the raw materials, therefore the substance is not expected to be present in the packaging." or something similiar. Some of our customers are not happy with general statements, they want to have a specific look / assessment on their packaging and the confirmation in one document.

Issue 7

8. Update on sustainability related topics.

9. Miscellaneous.

Meeting calendar 2025.

Thank you for your attendance and contributions !