

Aerosol dispensing forum talks

LEREM Laboratory

Director: Franck Flécheux





Content

- LEREM laboratory presentation
- Chrome Free Passivation Active tin plate
- Internal coatings in the aerosol cans including an additional LEREM internal coating expertise field available to the packaging industry



LEREM laboratory presentation & services

- Independent research laboratory, legally set up as a French Association of General Interest, since 1961.
- Independent service of expertise for the packaging industry; prominently to metal packaging, but also to other materials.
- The LEREM is a member of standardization bodies, (AFNOR CEN / TC 261 / SC4) and regulatory committees at National level via SNFBM, via Metal Packaging Europe (MPE), The European Industrial Packaging Association (EIPA) and the European Federation of Aerosols (FEA).
- One of the few laboratories certified by the French Ministry of Ecological Transition to control and validate Packaging up to 400 liters, for companies worldwide.
- Certification of dangerous goods transportation for all types of metal packaging.
- The LEREM is certified ISO 9001 issue 2015.



LEREM laboratory presentation & services

- The LEREM is an expert center with regards to:
 - Aerosol packaging
 - Pressure tests
 - Stability storage tests
 - Drop tests
 - Flammability tests
 - Corrosivity tests
 - Classification (Solid or Liquid) for chemical products
- In addition, the LEREM offers:
 - MALVERN SP 2000 Granulometry tests (particle size measurements) for Aerosol dispensers as well as spray pattern determination
 - Storage rooms with controlled temperature and humidity
 - Can making process expertise
 - Small run size filling capacity for stability tests including aerosol cans.
 - SEM Investigation



LEREM laboratory collaborations

- The LEREM has an agreement with the CFA in order to support the CFA and the CFA members on technical issues.
- The LEREM is engaged via a collaboration agreement with the LABERCA in order to support the metal packaging industry in deep internal coating analytical investigations following an ANR project named OLIGO on a new internal coating generation. A LEREM Ph.D. is dedicated to that matter since 1st of June 2022.



Chrome Free Passivation Active tin plate

- All tin plate metal packaging supply chain actors, from the coil suppliers up to the can makers, are working hard to be ready on time.
- The steel producer will switch to CFPA steel starting in 2025.
- The deadline for the tinplate CFPA conversion end is 2027.
- The LEREM is part of the Metal Packaging Europe working group following this transition.
- The companies using tinplate packaging components (aerosol cans and valves mounting cups made of tin plate) should talk with their suppliers to anticipate that transition.



Internal coatings in the aerosol cans including an additional LEREM internal coating expertise field

- The new internal coating generation is coming
- The new internal coating generations are already in place in the food industry
- The new internal coating generations are coming in the cosmetic industry
- In order to avoid a similar issue, like the BPA with the former epoxy phenolic coatings, and thanks to the impressive analytical chemistry improvements, a French national project named OLIGO has been financed by the ANR in July 2021 for the LABERCA, part of the INRAE. The project now is on-going .
- The French metal packaging industry, which strives to be proactive about consumer food safety, has commissioned LEREM to enter into a collaboration agreement with LABERCA.
- The LEREM Board approved the development of the new LEREM's expert area by the end of 2021 through two main actions:
 - To fix a collaboration agreement with the LABERCA for the two coming years following the OLIGO project
 - To engage a Ph.D. specializing in research in analytical chemistry

Problematic context



SML: 0.05 mg BPA per
kg of food

COMMISSION IMPLEMENTING REGULATION (EU) No 321/2011

of 1 April 2011

amending Regulation (EU) No 10/2011 as regards the restriction of use of Bisphenol A in plastic infant feeding bottles

Loi n° 2012-1442 du 24 décembre 2012 visant à la suspension de la fabrication, de l'importation, de l'exportation et de la mise sur le marché de tout conditionnement à vocation alimentaire contenant du bisphénol A publiée au Journal Officiel du 26 décembre 2012 [sur le site *Légifrance*]

COMMISSION REGULATION (EU) 2018/213

of 12 February 2018

on the use of bisphenol A in varnishes and coatings intended to come into contact with food and amending Regulation (EU) No 10/2011 as regards the use of that substance in plastic food contact materials

REGULATION (EC) No 1223/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 30 November 2009

on cosmetic products

...non-intended small quantities of prohibited substances migrating from packaging to the cosmetic products shall be permitted, as long as it is technically unavoidable and **does not** endanger human health...



Problematic context



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Starting substances (e.g. monomers, prepolymers, additives, solvents etc.)

IAS



NIAS

Impurities, oligomers, reaction intermediates, contaminants, by-products, degradation products

COMMISSION REGULATION (EU) 2018/213

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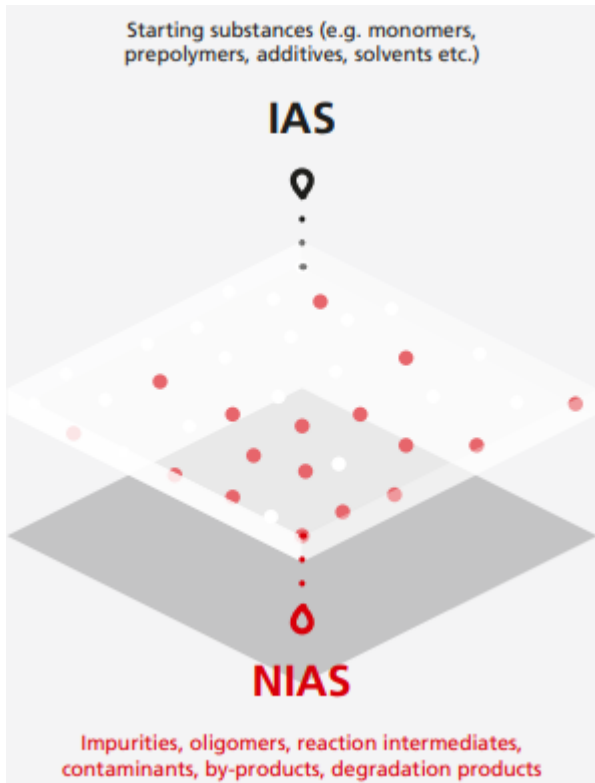
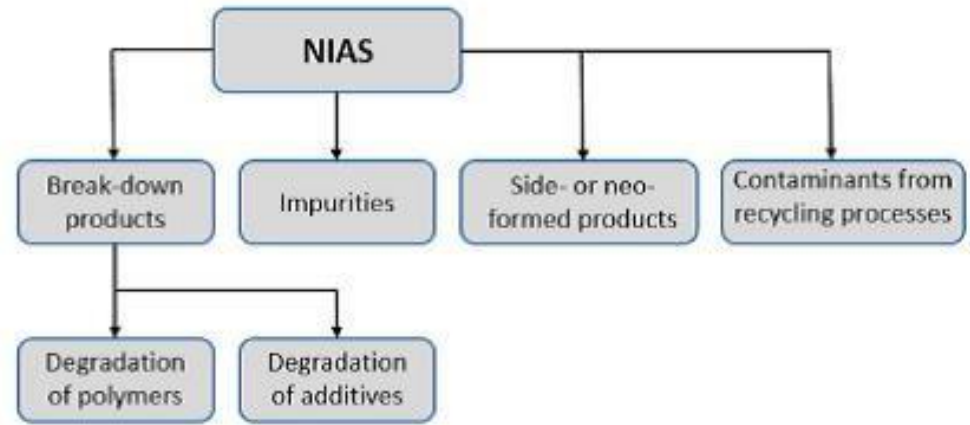
REGULATION (EC) No 1223/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 30 November 2009

on cosmetic products



Problematic context



What's hidden inside the metallic cans?



Problematic context

REVIEW

8 OPEN ACCESS

Systematic evidence on migrating and extractable food contact chemicals: Most chemicals detected in food contact materials are not listed for use

Birgit Guecke^a, Ksenia J. Groh^b, Maricel V. Maffini^c, Olwenn V. Martin^d, Justin M. Boucher^a, Yu-Ting Chiang^a, Frank Gwosdz^e, Phoenix Jieh^a, Christopher D. Kassotis^a, Paulina Łańska^a, John Peterson Myers^b, Alex Odermatt^f, Lindsey V. Parkinson^a, Verena N. Schreier^g, Vanessa Srebny^h, Lisa Zimmermann^a, Martin Scheringer^k and Jane Muncke^a

2881 FCCs have been detected, in a total of six FCM groups (Plastics, Paper & Board, Metal, Multi-materials, Glass & Ceramic, and Other).

65% of these detected FCCs were previously **not known** to be used in FCMs – **potentially NIAS**



Journal of Hazardous Materials

Available online 20 May 2022, 129167

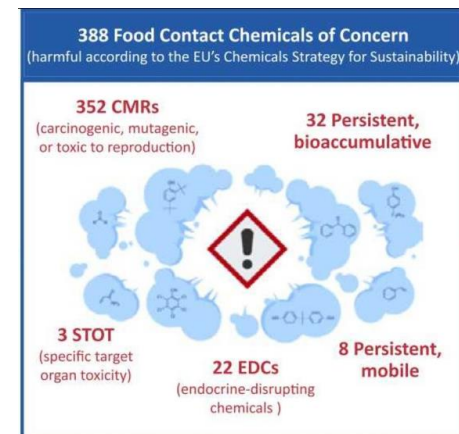
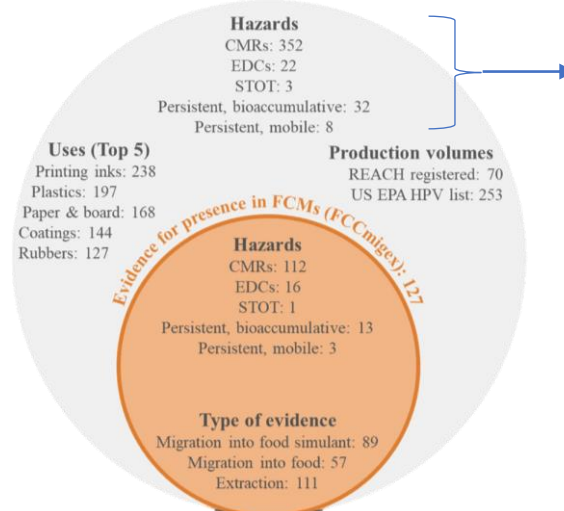
In Press, Journal Pre-proof



Implementing the EU Chemicals Strategy for Sustainability: The case of Food Contact Chemicals of Concern

Lisa Zimmermann^a, Martin Scheringer^b, Birgit Guecke^a, Justin M. Boucher^a, Lindsey V. Parkinson^a, Ksenia J. Groh^c, Jane Muncke^a

* Study on chemicals used intentionally and those that have been found to migrate into foods or food stimulants



Chemicals Strategy for Sustainability
Towards a toxic-free environment

October 2020

Objective: improve the protection of human health and remove the most harmful chemicals from consumer products, including from FCMs, cosmetics, detergents, etc.

Has the potential to banning the use of chemicals of concern that are CMR, or persistent and bioaccumulative, or endocrine-disrupting chemicals.





Problematic context



Brussels, 9.6.2022
SWD(2022) 163 final

COMMISSION STAFF WORKING DOCUMENT

EVALUATION

of the

legislation on food contact materials - Regulation (EC) No 1935/2004

"[...] potential weaknesses in the current approach to regulating FCMs.

These concern identification and measures to control non-intentionally added substances (NIAS), to ensure risk assessment and risk management is up to date, deficiencies in the exchange and availability of compliance documentation in the supply chain as well as the scope of the mandatory risk assessment, which does not sufficiently address vulnerable populations or potential exposure to combinations of substances [...]"

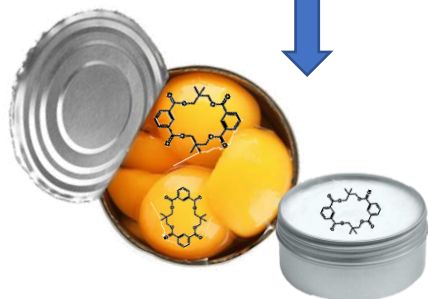
Project Phenix

Inner
coatings



Migration

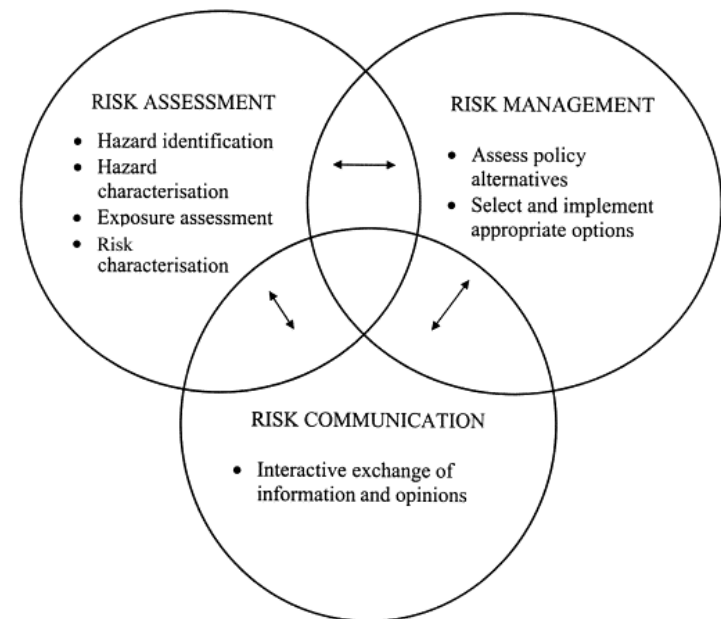
Contents of
these cans



The actors of the industrial sector of FCMs and metallic packaging manufacturing wish to increase their efforts of investigation of NIAS in their products by:

- 1) Identification of their structure
- 2) Characterization of their migration levels
- 3) Risk assessment

Risk Analysis





**The LEREM team remains at your disposal.
Thank you for your attention !**

