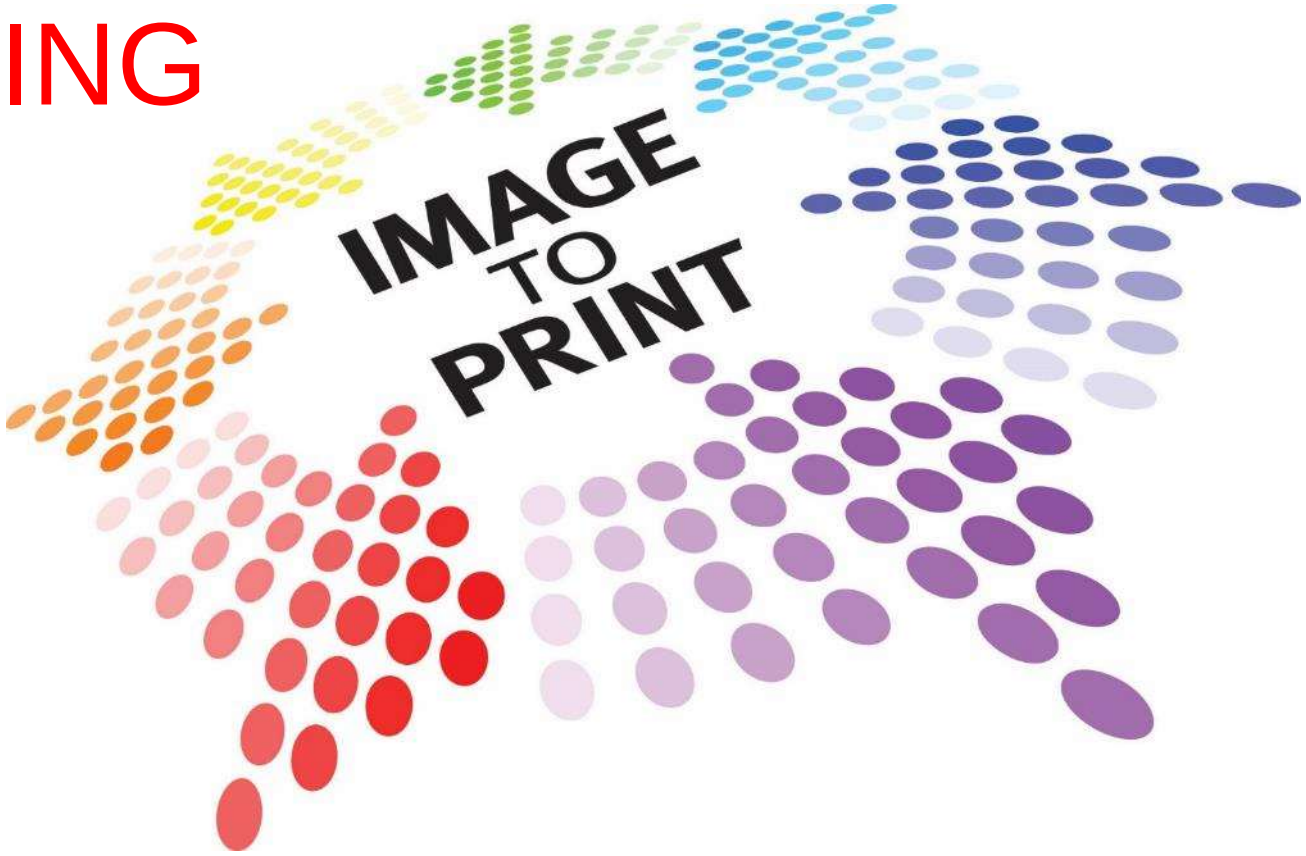
PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

20 / 21 March 2019
Jakarta, Indonesia



PRINTING TECHNOLOGY & INNOVATION
DAYS FOR FLEXIBLE PACKAGING

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PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

INK SAFETY BEYOND LEGAL REQUIREMENTS AS PART OF SUSTAINABLE PACKAGING

Dr. Evert Delbanco
Director Food Safety + Toxicology,
Siegwerk

Agenda

- Food packaging safety – a must have
- Concerns for Toluene as solvent

Safe raw materials and safe products are an essential prerequisite for recycling and circularity

All raw materials used are **non-(acute) toxic/not known CMRs*** and meet Siegwerk's stringent **commitments/ internal standards**, which go beyond legal requirements.

Siegwerk develops packaging inks that are **safe for consumers** and **minimize environmental impacts**

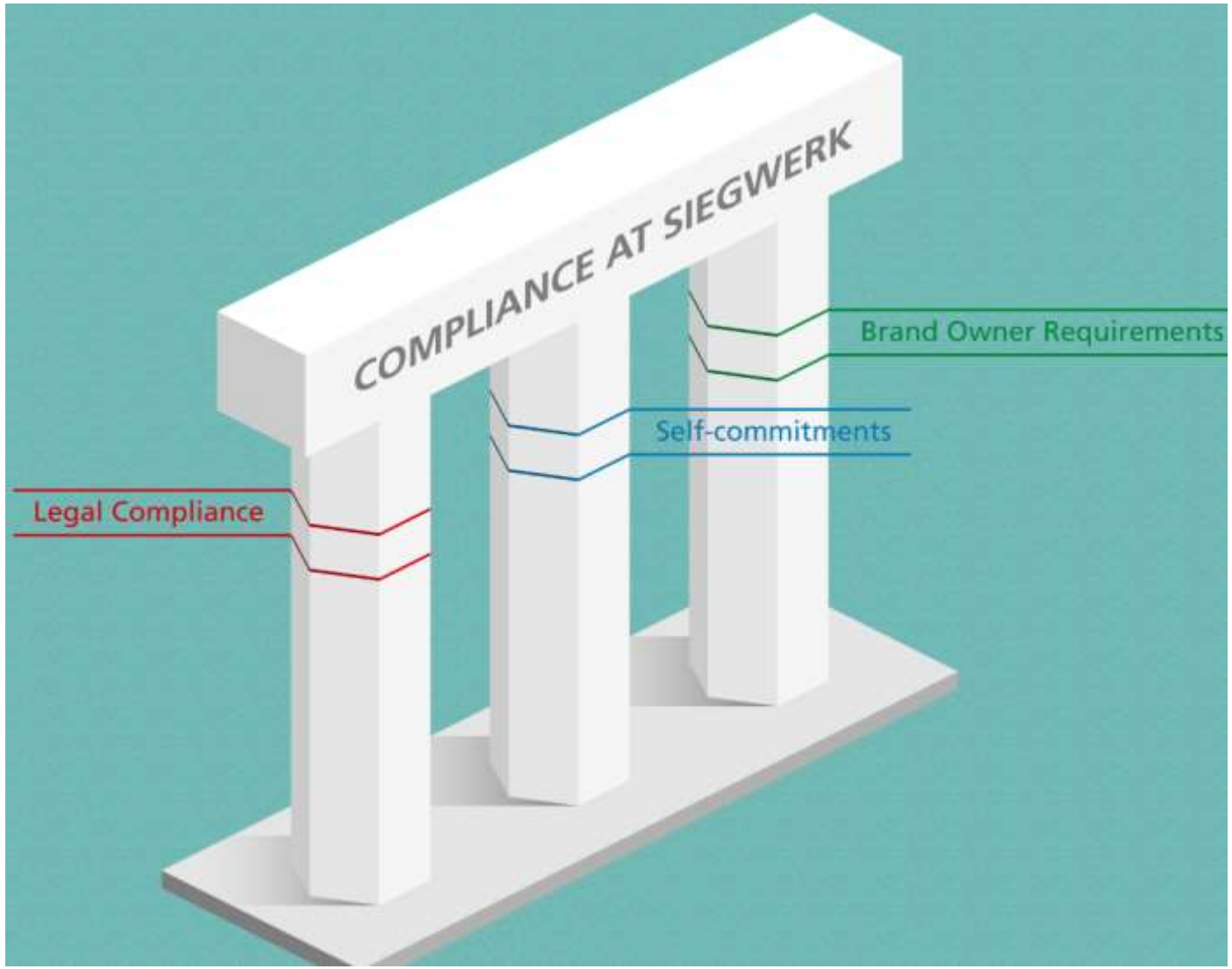
This applies in particular to **NPH packaging applications** (Nutrition, Pharma, Hygiene) and Tobacco packaging.

PRODUCT SAFETY TRANSPARENCY by SIEGWERK

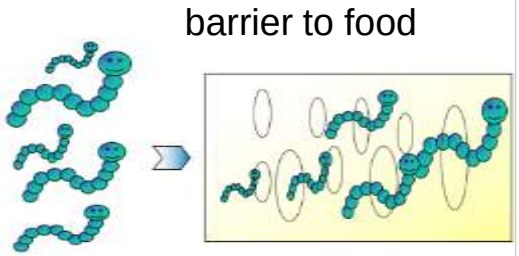
We stand by our customers with advice and assistance.

*CMR = Carcinogenic, Mutagenic, Reprotoxic

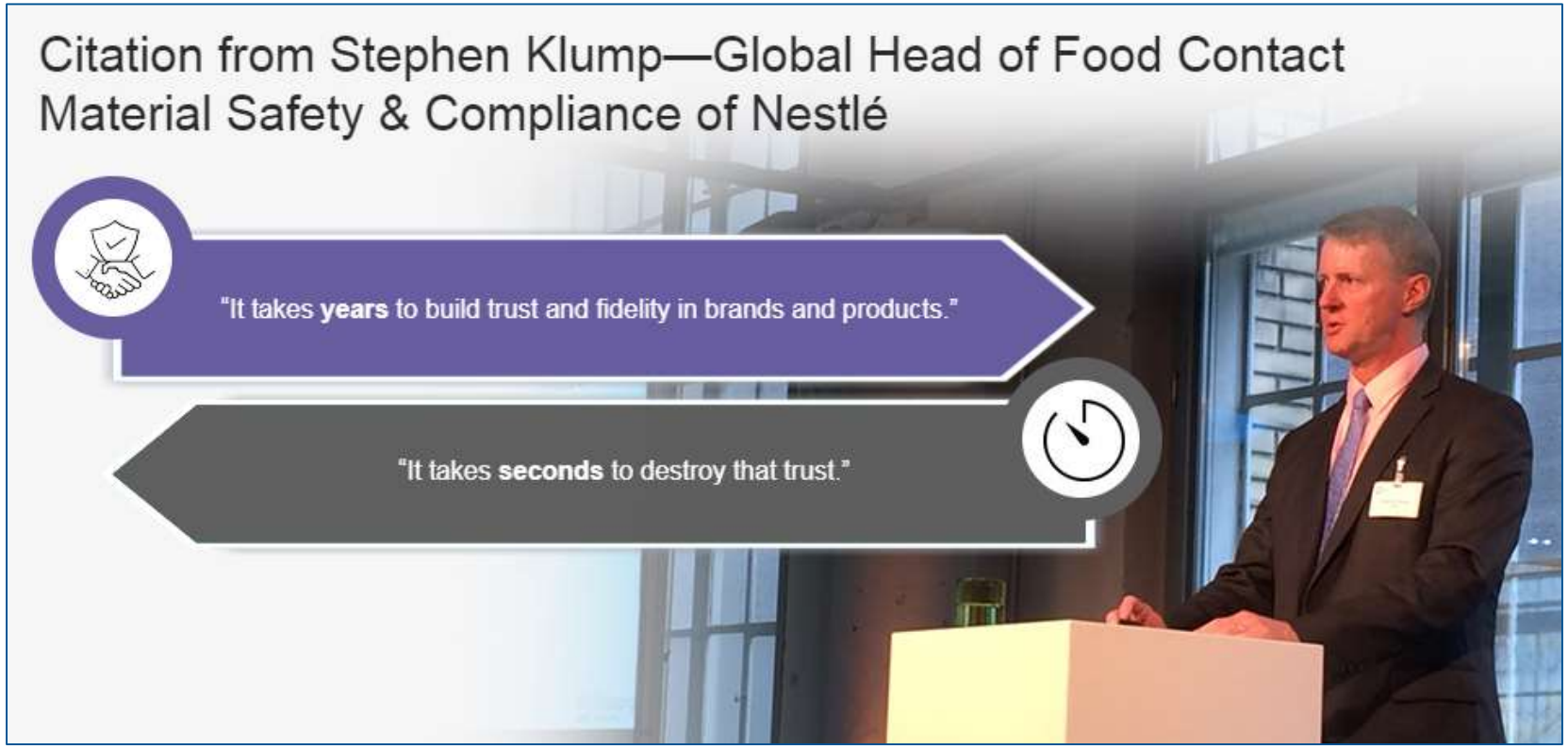
Safety measures beyond legal compliance



Topics which need to be considered….

I. Reg. compliance	II. Consumer safety	III. Perceived safety
• Food safety scandals in the past triggered increasingly tight regulation across regions	• Migration issues have been overseen several times • Risks associated with ink and packaging to be evaluated	• Distribution of information via social media worldwide • Any issue in the context gets pub-lic immediately
		

Be aware of brand damage



Special attention to sensitive applications

Special attention to substances of concern

Solvents

Binders

Additives

Colorants

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Use of Toluene in Packaging Gravure Printing

- Predominantly used in Asia for this printing technology
  - Predominantly excellent solving properties
  - Easily available
  - Cheap

- Concentration of Toluene can be up to 40% in inks
- Toluene drift is getting stronger as more global brand owners are asking about it
- Implementation of Toluene free inks is slowing due to unawareness and cost reason

Toluene – Health Risks

Skin irritation / Dermatitis

Suspected of damaging the unborn child

Toluene – Ototoxicity

Imbalance

Hardness of hearing / Anacousia

Intensified by industrial noise!

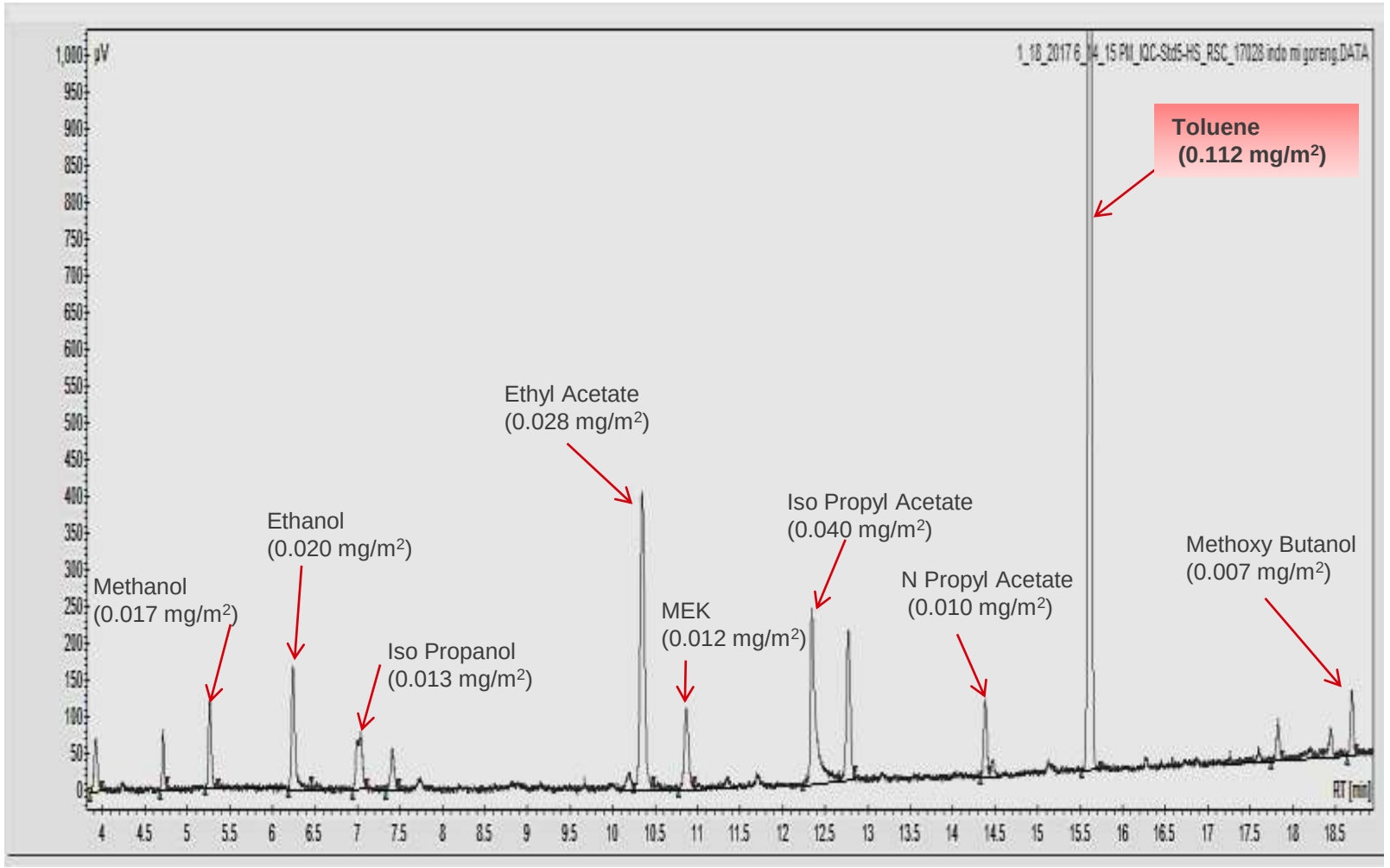
Toluene – toxicological effects

- Breathing difficulties
- Eye and throat problems
- Skin irritation / dermatitis
- Neurotoxicity (dizziness, hallucinations, memory loss, confusion)
- Ototoxicity
- Reprotoxicity
- Ecotoxicity (air pollution via photochemical smog)
  - Photochemical smog is the formation of reactive compounds (e.g. ozone) by the action of sunlight on VOCs and nitrous oxides (NO_x)
  - Photochemical Ozone Creation Potential (POCP) is an indicator of the ability of a VOC to contribute to photochemical ozone formation
  - Toluene has a higher POCP compared to alternative solvents

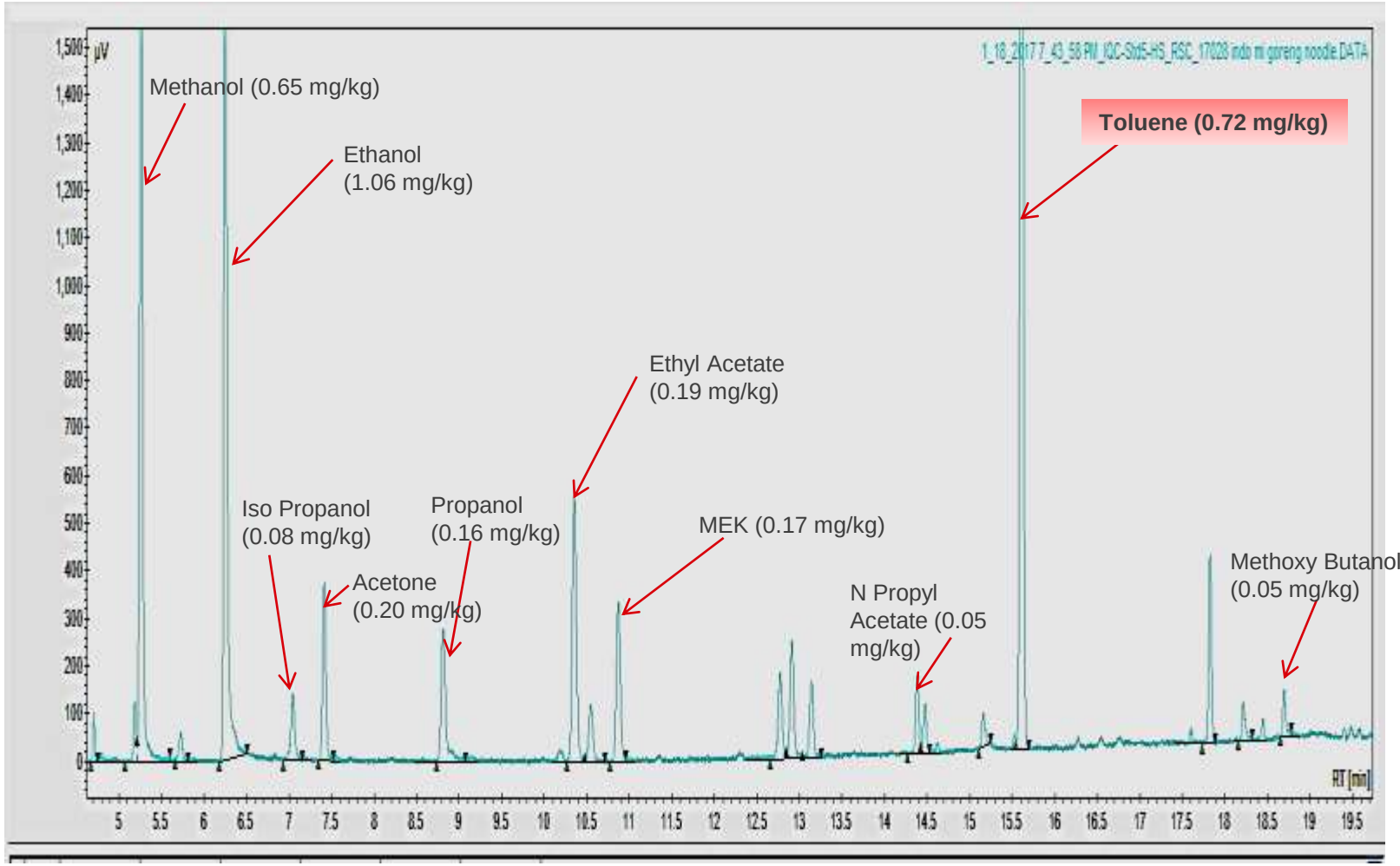
Toluene – Organoleptic Properties

- Residual Toluene from packaging has an impact on organoleptic properties of food (odor, taste)
- Odor threshold varies: 0.5 – 100 mg/m^3 (130 ppb – 26 ppm) depending on the source
  - WHO (2000): 1 mg/m^3 (260 ppb)
  - Low compared to alternative solvents

Example Indonesia – Packaging Analysis



Example Indonesia – Food Analysis (Noodles)



Toluene in Printing Inks – Regulatory Bans

EU 10/2011 Plastic Implementation Measure (PIM)
Not listed

China GB 9685
Not listed

California
Proposition 65

India IS 15495
Ban under preparation

Brand Owner Views – Requirements

Toluene

Not accepted by big brand owners who act on a global basis as solvent for printing inks for food packaging.

Examples:

- Nestlé
- Perfetti van Melle
- Mars/Wrigley
- Philip Morris

Toluene is explicitly banned for food packaging inks by the

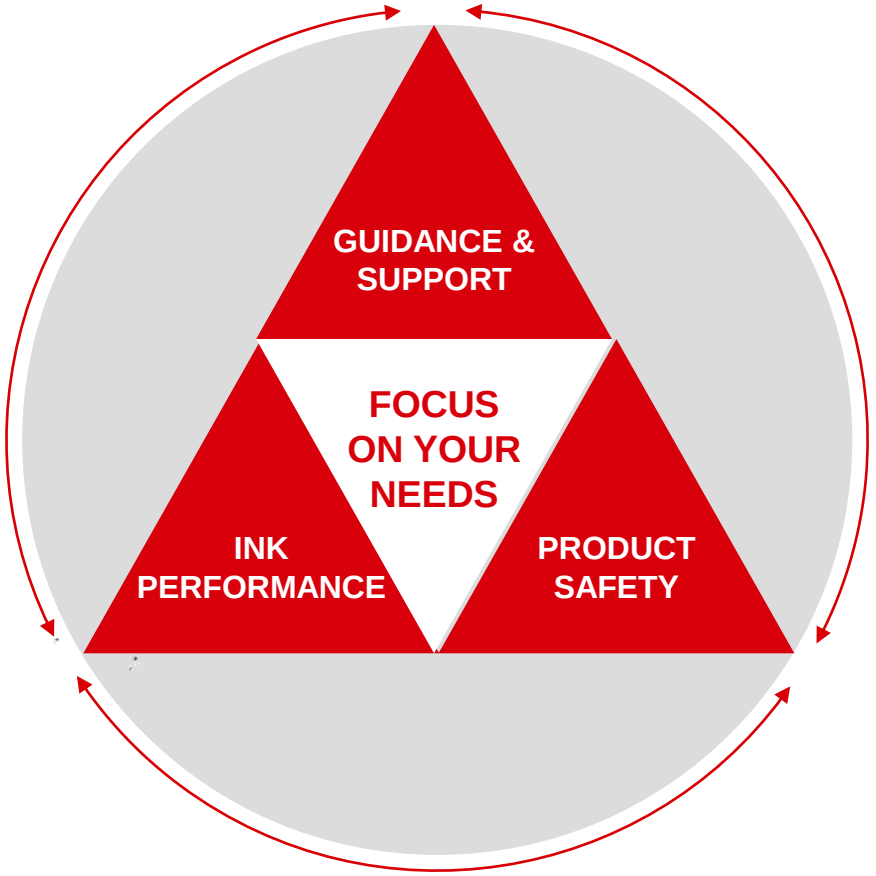
- “Nestlé Guidance Note on Packaging Inks”
- “Perfetti van Melle Guideline printed & coated packaging materials”

Siegwerk offers solutions

- **Non-Toluene (NT) Inks**
  - Alternative solvents: Ethanol/Alcohols, Ethyl Acetate/Esters
- **Migration optimized safe inks for sensitive applications**
  - Thorough selection and evaluation of raw materials
- **Proactive transparency and shared responsibility**
  - Communication of migrants down the packaging chain via Statements of Composition
  - Basis for compliance assessments along the packaging supply chain

We guide you to efficient & safe performance

INK, HEART & SOUL



THANK YOU FOR YOUR ATTENTION.

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