

Cosmetics Europe

ECHA workshop 30-31st May 2018
Intentionally added microplastics to products
Break-out session: Cosmetics

We personally care



What we will cover

Introductory elements

Rinse-off

Potential (pathways) for releases to the environment

Function

Alternatives

Transitioning time to alternatives: time/costs (reformulation)

Other impacts

Leave-on

Potential (pathways) for releases to the environment

Function

Alternatives

Transitioning time to alternatives: time/costs (reformulation)

Other impacts

In summary

Introductory elements: 1/3

What is the issue we are trying to address? Plastic aquatic litter

- Protection of the environment is of utmost importance to the cosmetics and personal care industry.
- The European cosmetics and personal care industry has taken positive action on the matter of plastic aquatic litter.
- Widely acknowledged that the cosmetics sector is a minor potential contributor (estimates 0.1%-2%*) of the total aquatic plastic litter
- Such a minor contribution has been decreasing year-on-year since 2012, with the progress made on the CE recommendation/voluntary initiatives towards a complete phase-out of plastic microbeads

Definitions

- **Microplastic particles**: Water insoluble **solid** plastic particles with a size less than 5mm that can be found as aquatic litter, where **plastic** is understood as synthetic water insoluble polymers that can be moulded, extruded or physically manipulated into various solid forms which retain their defined shapes in their intended applications (i.e. use and disposal).
- **Plastic microbead**: Any intentionally added, 5 mm or less, water insoluble, solid plastic particle used to exfoliate or cleanse in rinse-off personal care products.

All plastics are polymers but not all polymers are plastics

Introductory elements: 2/3

All CE membership surveyed to collect current data for ECHA CFE:

- Data gathered by CE for ECHA CFE from **56 companies (including SMEs)** with businesses across EEA & representing over 50% of the market.
- More than >19,000 formulations: This implies that estimations have a margin of error of less than 1%.

Approach to “Microplastic” for the data collection for the purpose of the ECHA CFE and for purposes of this presentation only:

- Tried to use the working definition provided by ECHA in CFE
- Data collection survey covered substance which are microplastics and others which are not microplastics but may be covered by ECHA’s working definition, in order to measure economic impact
- ECHA’s working definition extremely broad: not workable nor enforceable, not possible to exhaustively examine the impact or a restriction based ECHA’s working definition

CE screened & identified in cosmetics:

- **19 priority substances (INCI names):** INCI does not cover physical forms. Not all considered to be microplastics; certain physico-chemical parameters are necessary, i.e. the physical form
- **35 different types of products** containing microplastics and the relevant non-microplastic ingredients identified: Categories reflect the CPNP (Cosmetic Products Notification Portal - Europa EU) categories.
- **12 Technical functions** for microplastic and non- microplastic substances

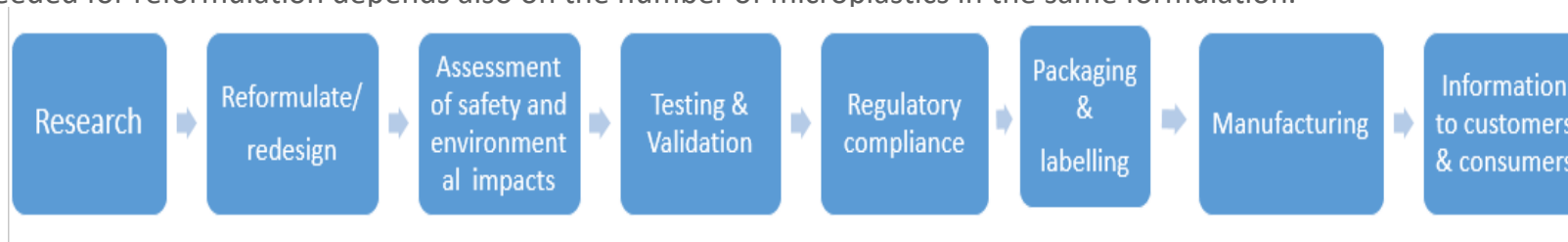
Introductory elements: 3/3

Advantages of using microplastics* (* note: based on the approach taken for the CFE):

- Many technological advantages of using microplastics in cosmetics:
 - Particle size and roughness easily adjustable with good quality control
 - Technologically simple to handle
 - No (negative) influence on product stability
 - Good skin tolerance, and good shelf life.

Typical reformulation process:

- Lasts around 4.5 years, provided that suitable alternatives are available.
- If no suitable alternatives from suppliers, fundamental research is needed the first step in the process would be extended to 8-10 years.
- Time needed for reformulation depends also on the number of microplastics in the same formulation.



Status of research of alternatives

- Where possible, suitable alternative ingredients have been introduced, e.g. in cleansing and exfoliating rinse-off products.
- Cost of alternatives is over 100% higher and, in some cases, 2000% more expensive, while they are not available in sufficient volume to meet market demand.
- For a large majority of applications suitable alternatives do not exist as substances explored until now fail to meet performance, safety and environmental standards.
- One-to-one substitution of ingredients not always feasible.
- Suitability of alternatives depends also on the interaction with the other ingredients in the formulation.
- Reformulating thousands of formulations at the same time is extremely problematic: requires deviating R&D qualified workforce to focus on redesign instead on innovation.

Rinse-off cosmetic products:1/2

- “Rinse-off product” means “a cosmetic product which is intended to be removed after application on the skin, the hair or the mucous membranes”
- Rinse-off: 1672 tons of “microplastics”* used *note: this includes ingredients which CE would not define as microplastics
- The potential (pathways) for releases to the environment are down the drain to the waste water treatment plant system
- The technological functions identified in rinse-off products (other than exfoliating and cleansing plastic microbeads) are: Opacifying
- For uses (other than exfoliating and cleansing): There are no known suitable available alternatives for functions other than exfoliating and cleansing

Rinse-off cosmetic products: 2/2

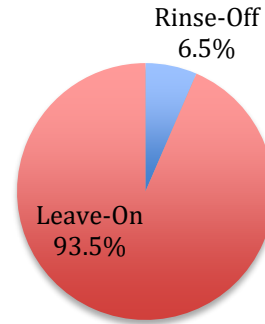
- A restriction in all rinse-off cosmetics products would result in the elimination of the “usage” of 1,672 tons of “microplastics” per year in five years (note: this includes 107 tons of plastics microbeads covered by the CE recommendation).
- Industry will be challenged with the reformulation of 1,568 formulas while suitable alternatives are not readily available other than for exfoliating and cleansing.
- The corresponding cost would amount to: 2,820,212,603 euro/year.
- In addition, industry would need a considerable amount of time from any effective date of laws or regulation for research and development to determine potential alternatives, product reformulation and testing, and market transition
- Other main significant impacts: see slide 11

Leave-on cosmetic products

- “Leave-on product” means a cosmetic product which is intended to stay in prolonged contact with the skin, the hair or the mucous membranes.
- Leave-on product category includes a very wide number of different product categories e.g. skin care, make-up: mascara, foundation, eye shadow, lipstick, nail varnish....
- Leave-on: 861 tons*/year * note: this includes ingredients which CE would not define as microplastics
- Potential pathways for release to the environment: these are complex and in reality only a very small fraction would end up in the aquatic environment.
 - Preliminary results of a randomised, on-line survey of 8000 consumers, adult age ranges, 8 European Union member states, prepared by Kantar TNS for Cosmetics Europe shows: 75% of make-up users surveyed removed their make-up with cotton or wipes and of that 95% disposed of the cotton or wipe in the waste bin.
- The technological functions identified in leave-on products are: Soft focus, Matifying, Opacifiers, Glitters, Visual cues and colorbeads, Other sensorial (e.g. Touch, feel) functionalities, Filler
- For all functions in all leave-on product categories identified: There are no known suitable alternatives available

Comparison between rinse-off and leave-on

Number of Formulations in % (Rinse-Off vs. Leave-On)



Rinse-off products contain at maximum two microplastic ingredients, although the vast majority – 95% – of rinse-off products contain only one microplastic ingredient.

Conversely, a small percentage of leave-on products (about 6% of leave-on products, or about 5% of all cosmetic products) are more complex, contain up to 6 microplastic ingredients, therefore much more difficult to reformulate.

Restriction of “microplastic” * ingredients in all cosmetics products

A restriction of microplastics in all cosmetics products (including leave on products) would imply the ban of 16 “microplastic” ingredients, corresponding to 2,533 tons/year, however 24,172 formulations will be affected resulting in loss of revenue for the industry of 12,216,845,695 euro/year (*note: this includes ingredients which CE would not define as microplastics)

In addition to potential for limited available alternatives, industry would need a considerable amount of time from any effective date of laws or regulation for research and development to determine potential alternatives, product reformulation and testing, and market transition.

Other main significant impacts both rinse-off and leave-on

- Economic/commercial e.g. R&D, performance tests, modification costs, packaging and labelling..
- Performance/technical e.g. loss of performance
- Health Environment and safety risks e.g. loss of environmental benefits if polymers are lost
- Social impacts e.g. loss of employment in EEA, less choice to consumers, loss of emotional benefits, loss of certain leave on categories altogether (e.g. lipsticks, powders) which consumers want
- Wider impacts e.g. if a REACH restriction wider than the international bans non -tariff barriers
- SMEs are likely to be more negatively affected in proportion to big companies

In summary

- Protection of the environment is of utmost importance to the cosmetics and personal care industry.
- **Cosmetics** sector is widely acknowledged to be a **minor contributor to the issue of plastic aquatic litter**. The European cosmetics industry has taken positive action: on track towards a **complete phase-out** of plastic microbeads by 2020: **97.6 % reduction between 2012-2017**
- The European cosmetics and personal care industry remains committed to work together with ECHA and other stakeholders towards an effective and **proportionate** European approach based on **risk and scientific** evidence which is of **true benefit** to the environment:
 - Common set of science based **definitions** of e.g. plastic and microplastic is critical
 - ***All plastics are polymers but not all polymers are plastic!***
 - Clear assessment of the **impact and a proportionate approach** with respect to the overall objectives to be achieved is vital: for example, availability of suitable alternatives, reformulation feasibility and process, and transitional periods must be taken into account
 - **Coherence, effectiveness, and the enforceability** of any approach needs to be carefully considered.
 - **Effectiveness** of any potential approach to the overall objectives needs to be weighed against the disproportionate **socio-economic costs** for the cosmetics industry and consumers.

ECHA workshop 30-31st May 2018
Intentionally added microplastics to products
Break out session: Cosmetics

30/31 May 2018

We personally care



Cosmetics Europe
the personal care association

Microplastics*

The list of substances does include microplastics, as per Cosmetics Europe's definition *and substances which *we do not consider as Microplastics according to the same definition.

- Polyethylene
- Polypropylene
- Polymethylmethacrylate
- Polytetrafluoroethylene
- Polyurethane crosspolymer – 1
- Polyurethane crosspolymer – 2
- Polyamide (nylon) 5
- Polyamide (nylon) 6
- Polyamide (nylon) 12
- Styrene acrylate copolymer
- Polyethylene terephthalate
- Polyethylene isoterephthalate
- Polybutylene terephthalate
- Polyacrylates, acrylates copolymer
- Ethylene/Acrylate copolymer
- Polystyrene
- Methyl methacrylate crosspolymer

- Polymethylsilsesquioxane
- Poly lactic acid

Type of products

containing microplastics and the relevant non-microplastic ingredients

- Skin care products
- Skin cleansing products
- Body hair removal products
- Bleach for body hair products

- Products for correction of body odour and/or perspiration
- Shaving and pre- / after- shaving products
- Make-up products/Foundation/Liquid
- Make-up products/Foundation/Powder
- Make-up products/Concealer

- Make-up products/Other face make-up products
- Make-up products/Mascara
- Make-up products/Eye shadow
- Make-up products/Eye pencil
- Make-up products/Eye liner

- Make-up products/Other eye make-up products
- Make-up products/Lip stick
- Make-up products/Lipstick sealer
- Make-up products/Other lip make-up products

- Make-up products/Body or face paint, including "carnival make-up"
- Make-up products/Other make-up products
- Perfumes
- Sun and self-tanning products
- Other skin products
- Hair and scalp care and cleansing products
- Hair colouring products
- Hair styling products
- Other hair and scalp products
- Nail varnish and remover products
- Nail care/Nail hardener products
- Nail glue remover products
- Other nail and cuticle products
- Tooth care products
- Mouth wash/Breath spray

- Tooth whiteners

Technical function provided by the microplastics and the non-microplastic ingredients in products

- Cleansing
- Exfoliating/Scrubbing
- Soft focus
- Matifying
- Opacifiers
- Glitters
- Visual cues and colorbeads
- Other sensorial (e.g. Touch, feel) functionalities
- *Film forming*
- Skin conditioner
- Filler
- *Binder*

- 6 functions account for 94.5% of all 12 functions
- As per the Cosmetics Europe definition, film formers and binders are not Microplastics