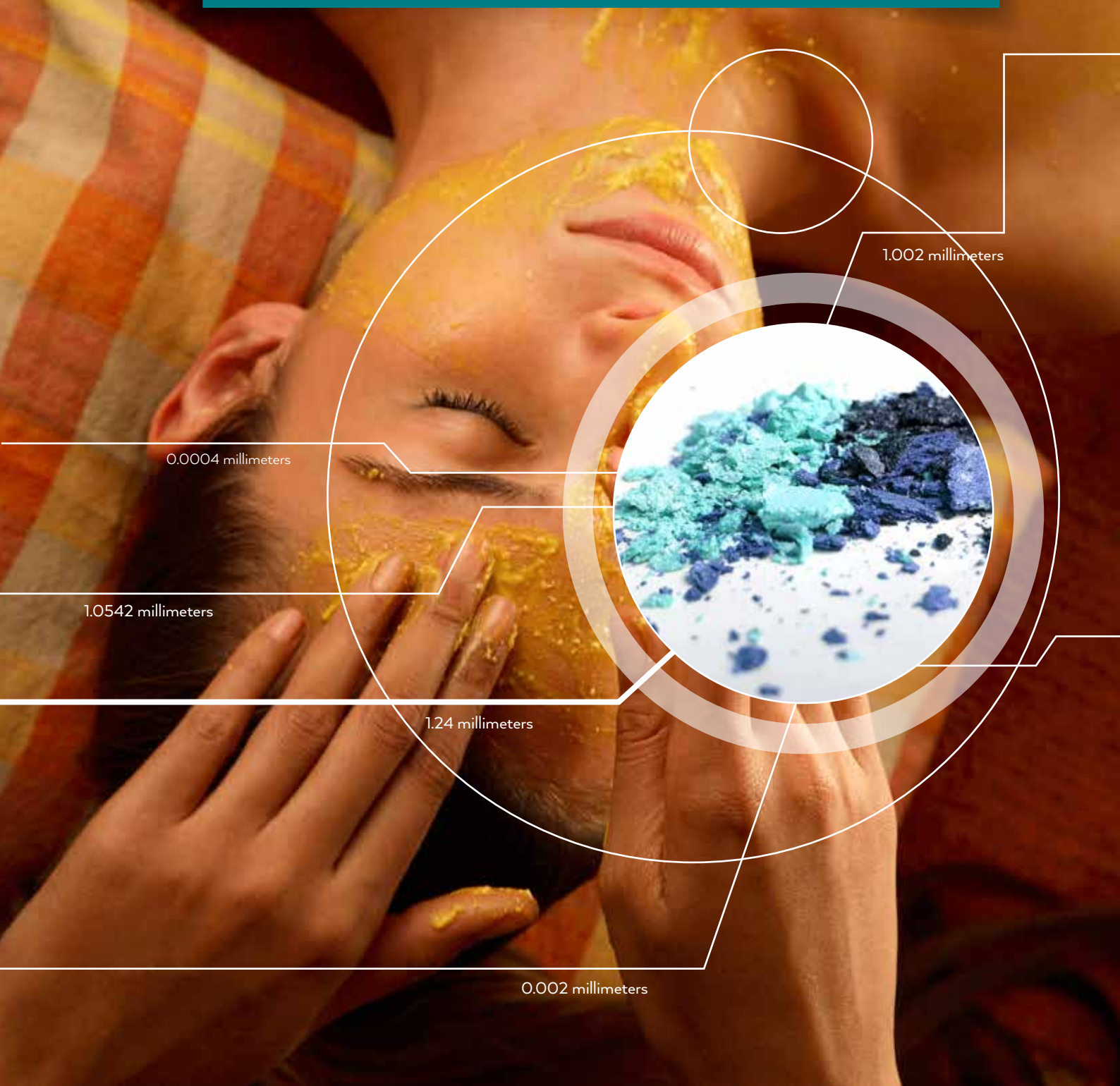




PLASTIC IN COSMETICS

ARE WE **POLLUTING** THE ENVIRONMENT
THROUGH OUR PERSONAL CARE?

PLASTIC INGREDIENTS THAT CONTRIBUTE TO MARINE MICROPLASTIC LITTER



0.0004 millimeters

1.0542 millimeters

1.24 millimeters

0.002 millimeters

1.002 millimeters

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This report was commissioned by:

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

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Summary

- Spherical or amorphous plastic particulates are used as ingredients in personal care and cosmetic products (PCCPs) for a variety of purposes such as sorbent phase for delivery of active ingredients, film formation, exfoliation, viscosity regulation and many others. 'Microbead' is one of many terms applied to plastic PCCP ingredients; they may also be called microplastics, microspheres, nanospheres, plastic particulates etc.
- A large number of plastic materials are currently being applied in PCCPs. Since their appearance in cosmetics 50 years ago, plastics have become widespread in cosmetic and personal care formulations.
- PCCP microplastics, as discussed here, are synthetic solid materials made from various types of polymers¹ and chemicals (e.g. additives). Water-soluble materials and liquid synthetic polymers fall outside the definition of 'microplastics' applied in the marine litter field because they are not particulates (solids) and therefore fall outside the scope of this paper.
- Most of the plastic ingredients in PCCPs contain nondegradable polymers. These plastics may take hundreds of years to completely degrade via oxidative or photodegradation routes. Replacing plastic ingredients with biodegradable plastics such as Polylactic acid (PLA) is not advisable as PLAs only degrade when subjected to high temperatures in industrial settings.
- Plastic ingredients are applied in a variety of leave-on and rinse-off formulations such as: deodorant, shampoo, conditioner, shower gel, lipstick, hair colouring, shaving cream, sunscreen, insect repellent, anti-wrinkle creams, moisturizers, hair spray, facial masks, baby care products, eye shadow, mascara etc.
- There is more to 'microbeads' than meets the eye – while some are large enough to be easily visible to the naked eye, other microbeads on the market for PCCP formulations are as small as 1 μm . Others are even smaller than that (nano-particulates).
- The size of the particulates applied depends on the function in the cosmetic formulation. Many of the particulates in PCCPs today are between 1 and 50 μm in size.

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