Chemicals in Cosmetics
A chemical-intensive sector on the rise

- Cosmetics and personal care products amongst most chemical-intensive products

- Rapidly expanding sector:
  - A chemical revenue of 20 billion USD
  - End market size of 225 billion USD

- Rising demand for cosmetic products also driving the inorganic chemicals market

- Over 5,000 chemical ingredients used in the personal care industry, including chemicals of concern

- Green/sustainability, new patterns of consumption, demographic changes & human health are likely to have significant impact on this sector
Exposure of workers, consumers and the environment
Issues of Concerns Report - 2020

Issues of concern - SAICM

- Chemicals in products - CiP
- EDCs and potential EDCs
- Nanomaterials
- HHPs
- PFASs
- Lead in paint

GCO-II emerging evidence indicates risk

- Arsenic
- Microplastics
- PAHs
- Triclosan
- Phthalates
- Lead
- Cadmium

Mercury
EDCs and potential EDCs

IPCS/WHO 2020 definition of EDC: is “an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub) populations”.

People are exposed in daily life in four main ways:

- **Things We Buy**
  Consumer products that may contain EDCs

- **Things we grow**
  Agricultural exposure to EDCs

- **Places We Work and Live**
  Indoor exposure to EDCs

- **Things We Make**
  Industrial exposure to EDCs

Many household items, including clothing, bedding, personal care products and plastic containers contain potential EDCs such as phthalates, perfluorochemicals and phenols.

Some chemical where there is evidence for endocrine activity can also be used in cosmetics as fixatives, dyes, preservatives, UV filters, solvents, fragrance

- **Triclosan and Parabens**: Preservative and antimicrobial
- **Phthalates**: Solvent in cosmetics
- **Benzophenones**: UV filters

(Source: [2017 - Overview Reports on EDCs](#))
Lead in cosmetics

- Lead is used for its **pigmentation properties** in cosmetics and dyes.
  - Commercial eyeshadows can contain lead above the established limits;
  - Hair dye products can use lead acetate as a color additive.

One of the most widely used products containing lead is kohl (commonly found in Middle East, South Asia, North Africa, and the Horn of Africa). **In this case, up to one half of the chemical composition can be lead sulfide.**

**Action**: Develop and reinforce legislation and policies to eliminate use of lead compounds in products, including cosmetics.
Mercury in cosmetics

- One of top 10 chemicals of major public health concern (WHO)

- Mercury harms the nervous system, heart, kidneys, and other systems of the body - children, infants and fetuses are at the highest risk because of their developing nervous systems

- Exposure may happen through different pathways, including through use of cosmetics containing mercury, such as skin lightening products
Mercury in cosmetics

- Manufacture, import, and export of cosmetics with mercury content above 1ppm, including skin lightening soaps and creams to be phased out by 2020 under the Minamata Convention on Mercury.

- UNEP Global Mercury Partnership supports implementation of the Convention, provides knowledge and science on mercury and delivers outreach and awareness raising towards global action.
  - Information sharing session in cooperation with WHO and partners “Mercury in skin-lightening products: towards the 2020 deadline.”
Supportive enabling environment for action

- Importance of consumers’ demand, green and sustainable chemistry education and innovation as drivers for change, also avoiding regrettable substitution
- Support information-sharing along the value chain
- Further international concerted action required on a number of issues of concern
- Urgent need for strengthened Science-Policy Interface called for by the United Nations Environment Assembly
Useful links

- [https://www.unep.org/explore-topics/chemicals-waste](https://www.unep.org/explore-topics/chemicals-waste)
- [Global Chemicals Outlook II: From Legacies to Innovative Solutions - 2019](https://www.unep.org/explore-topics/chemicals-waste)
- [Assessment of Options for Strengthening the Science-policy Interface at the International Level for the Sound Management of Chemicals and Waste - 2020](https://www.unep.org/explore-topics/chemicals-waste)
- [State of the Science of Endocrine Disrupting Chemicals (EDCs) - 2012](https://www.unep.org/explore-topics/chemicals-waste)
- [Overview reports on Endocrine Disrupting Chemicals (EDCs) - 2017](https://www.unep.org/explore-topics/chemicals-waste)
- [Final review of scientific information on lead - 2010](https://www.unep.org/explore-topics/chemicals-waste)
- [UNEP Global Mercury Partnership](https://www.unep.org/explore-topics/chemicals-waste)
- [Chemicals in Products Programme](https://www.unep.org/explore-topics/chemicals-waste)
Thank you!