

Training materials:

Why children's exposure to chemicals of concern (CoCs) in toys is of particular concern

This document is part of the *International Chemicals Management Toolkit for the Toy Supply Chain* developed by the United Nations Environment Programme (UNEP) in collaboration with the Baltic Environmental Forum (BEF) within the framework of the Global Environment Facility (GEF) project ID: 9771 on Global Best Practices on Emerging Chemical Policy Issues of Concern under the Strategic Approach to International Chemicals Management (SAICM).

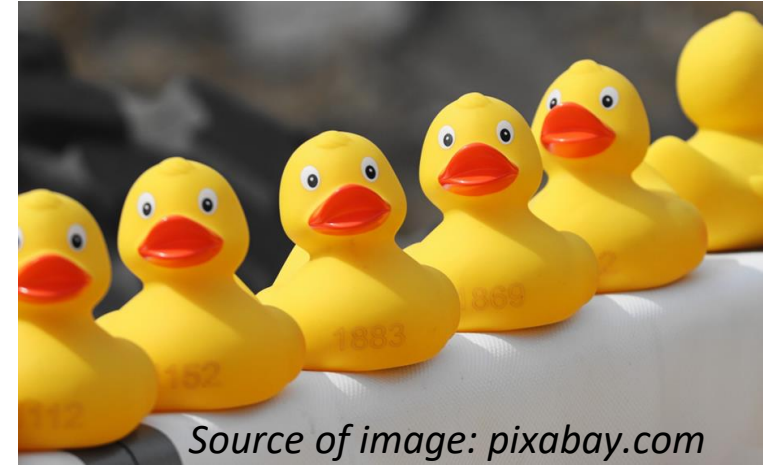
Care about chemicals in toys!

What are chemicals of concern (CoCs)?

CoCs are substances and compounds which have hazardous properties and cause concern to human health or the environment

Among CoCs, three categories can be distinguished:

- chemicals for which risk reduction action has been agreed on at an international level;
- chemicals for which scientific evidence exists to advance risk reduction action, these include chemicals that have been regulated at national or at regional level
- chemicals for which evidence for risk to human health or the environment is currently emerging from scientific research, but which are not yet regulated



Hazardous chemicals can cause harm to children

For example, some hazardous chemicals can

- **Cause cancer** in early childhood or later in life
- **Alter the brain development**, which may result in reduced intelligence or behavioural disorders (e.g. autism, attention deficiency syndrome)
- **Cause allergies or asthma**, that significantly decrease the child's quality of life
- **Change the function of the hormone system**, such as, for example, the reproductive system or the immune system and cause harmful effects (decreased fertility)



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Children are especially vulnerable to health impacts of CoCs

Higher uptake, higher body burdens

- Children breathe more air and eat more food per kg/body weight than adults
- The skin is more permeable than that of adults
- Children explore things (toys) by sucking and touching them -> close contact
- The detoxification systems (liver, kidneys, breath) are not yet fully developed -> slower excretion of chemicals



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Higher susceptibility as the body (systems) develop

- The immune and nervous system evolves during childhood; chemicals may interfere with that
- Hormone levels are partly very low in children; even very low exposures of endocrine disruptors may therefore make a large difference
- Overall, the bodies resilience to any type of disturbance is lower than for adults

Endocrine disrupting chemicals (EDCs) – a particular threat for children

Endocrine disruptors are chemicals that can change the function of the hormonal system, and impact, for example, the reproductive system or the immune system and cause harmful effects on human health. Such chemicals may be effective at very low doses and may cause long-term damage to humans.

For example, some of the chemicals that may be used in toys have been identified by the EU Chemicals Agency as endocrine disrupting chemicals:

- a) Phthalates (DEHP, BBP, DBP, DIPB), which are used as softeners in some plastic materials
- b) Bisphenol A, which may be included in any epoxy resins used for /in toys

Hormones steer the development of many vital body systems, including the brain, reproduction, metabolism and the immune system. Therefore, EDCs can cause manifold damage

Among the effects EDCs are associated with are disturbed brain development, early puberty, obesity, diabetes and behavioural disorders (UNEP, WHO Report, 2012: State of the Science of Endocrine Disrupting Chemicals)

There is a growing concern about the extent of the risk posed by endocrine disrupting chemicals and calls for action to reduce such risks

Toys – an important source of children’s exposure to CoCs

- Young children put toys into their mouths
 - ☐ ingestion of chemicals
- Children play with toys as much as they can, favourite toys accompany children everywhere and any time
 - ☐ frequent and long term exposure
- Toys are not always used as they should – and they can break
 - ☐ also chemicals in inner parts of toys can cause exposure



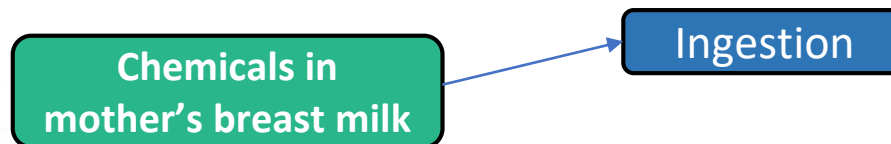
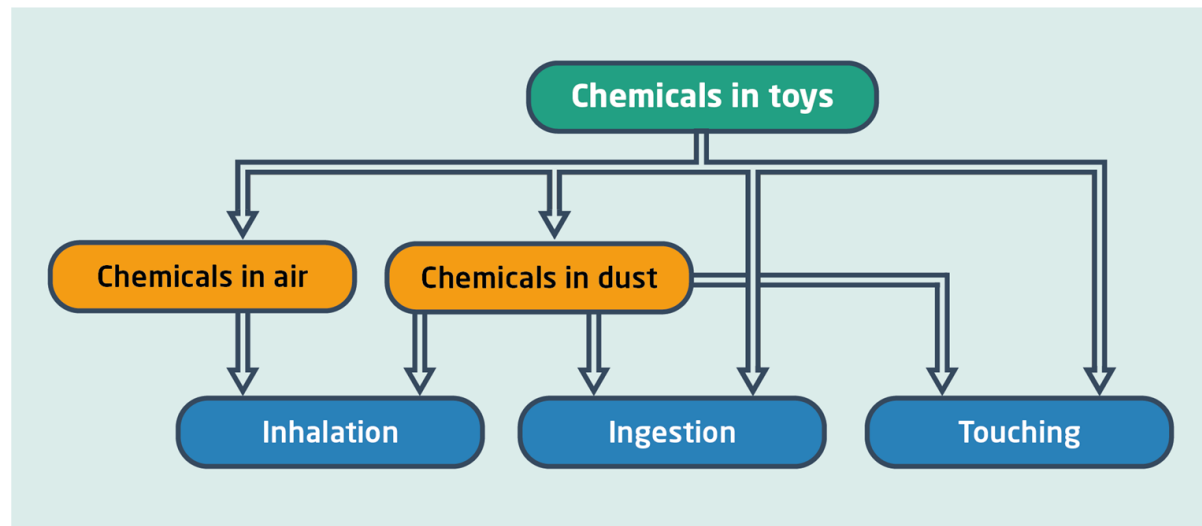
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Avoid CoCs in toys to prevent any harm to children!

How chemicals enter into children's body

→ Chemicals can only harm children when they enter the body; if there is an **exposure**

The pathways of exposure



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