Key concepts on CE & Health

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HERA SEMINAR, 07/05/2021
Empty World

Source: Mavropoulos & Nielsen, Industry 4.0 and Circular Economy, Towards a Wasteless Future or a Wasteful Planet? Wiley Publications, 2020

Full World

Source: Mavropoulos & Nielsen, Industry 4.0 and Circular Economy, Towards a Wasteless Future or a Wasteful Planet? Wiley Publications, 2020
Biosphere

Technosphere

Recycling

PRIMARY SOURCES

Supply side

Sink side

PRIMARY SINKS

processes under human control

processes outside human control

Primary Flows

Secondary Flows

Tertiary Flows

Source: Mavropoulos & Nielsen, Industry 4.0 and Circular Economy, Towards a Wasteless Future or a Wastefull Planet? Wiley Publications, 2020
~ 22 600 chemicals with a use over 1 tonne per year

~ 4 700 chemicals with a use over 100 tonnes per year prioritised in hazard characterisation and evaluation

~ 10 000 chemicals fairly well characterised for a subset of their hazards and exposures

~ 20 000 chemicals with limited characterisation for their hazards and exposures

~ 70 000 chemicals with poor characterisation of their hazards and exposures

Out of 419 chemicals found in hard, soft and foam plastic materials used in children toys 126 substances can potentially harm children’s health either via cancer or non-cancer effects, including 31 plasticizers, 18 flame retardants, and 8 fragrances.

Source: DTU, 02/2021, https://www.sciencedaily.com/releases/2021/02/210222124552.htm
CE requires more and better final sinks

Source: Mavropoulos & Nielsen, Industry 4.0 and Circular Economy, Towards a Wasteless Future or a Wasteful Planet? Wiley Publications, 2020
Thank You
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