SUSTAINABLE CHEMISTRY - AN ENABLER

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GLOBE EU conference on Sustainable Chemicals
Proactive consideration of sustainable chemistry…

... enables chemicals through-out their life-cycle to be better managed – in the sourcing, manufacturing/processing, use, product and end-of-life
Chemical Selection, Substitution & Sustainable Chemistry

Substitution in response to regulatory activity
Innovating a new chemical/material/product
(Re)Designing a product
Process change

https://www.oecd.org/chemicalsafety/risk-management/sustainable-chemistry/
A CHEMICALS PERSPECTIVE ON DESIGNING WITH SUSTAINABLE PLASTICS
Goals, considerations and trade-offs

Design principles of sustainable chemistry and engineering:
- Maximize resource efficiency
- Eliminate and minimize hazards and pollution
- Design systems holistically and using life cycle thinking

Sustainable design goals:
- Select materials with an inherently low risk/hazard
- Select materials that have a commercial ‘afterlife’
- Select materials that generate no waste
- Select materials that use secondary feedstock or biobased feedstock

General considerations for sustainable design from a chemicals perspective were identified as key elements for designers to take into account for each life-cycle phase when selecting material composition culminating with whole product optimization.
Focus innovation on alternatives to chemicals that will be regulated, or are likely to be regulated.

Linking Risk Management and Innovation
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Financial Measures
Increasing financing for sustainable chemistry
Applying economic instruments that incentivise substitution.

Education
Better integrate knowledge of toxicology and environmental health into chemistry and engineering programmes.

Chemical Management Frameworks
Integrate proactive chemicals management – sustainable design; greener chemistries
Consider life-cycle thinking in order to understand trade-offs
Have in place a systematic chemicals management framework.

Potential Policy for More Sustainable Solutions