

Substitution of hazardous chemicals

Arno Biwer
REACH&CLP Helpdesk Luxembourg
Luxembourg Institute of Science and Technology

REACH&CLP Annual conference
6th December 2018

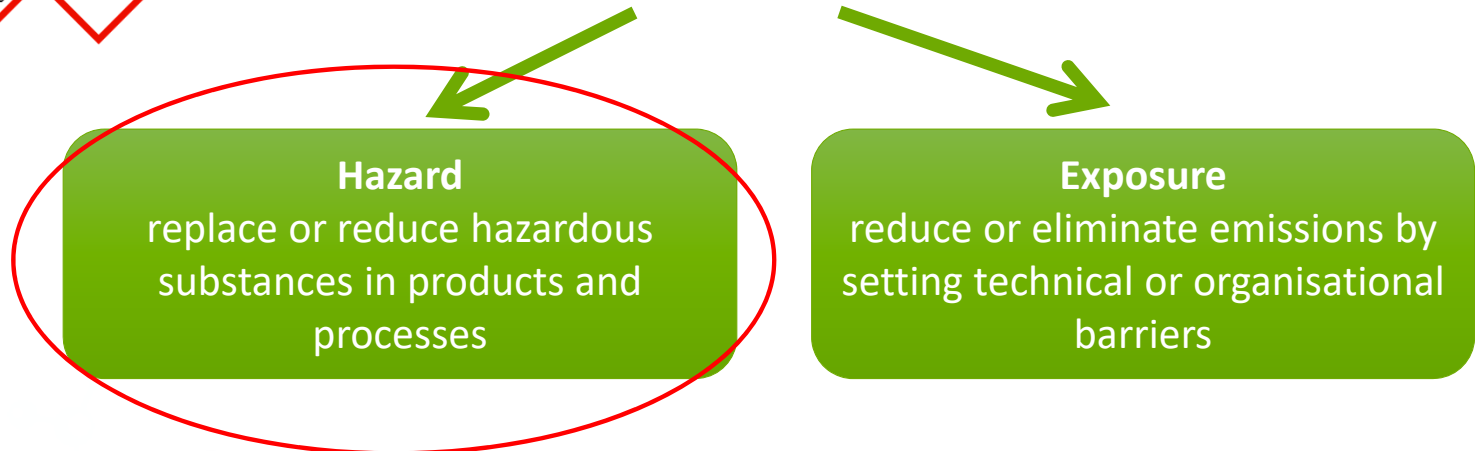


Substitution of hazardous chemicals



Risk Reduction

$$\text{Risk} = \text{Exposure} / \text{Hazard}$$



Substitution is a (preferred) way of eliminating or reducing the risk from chemicals to health, safety and the environment

You have to substitute!

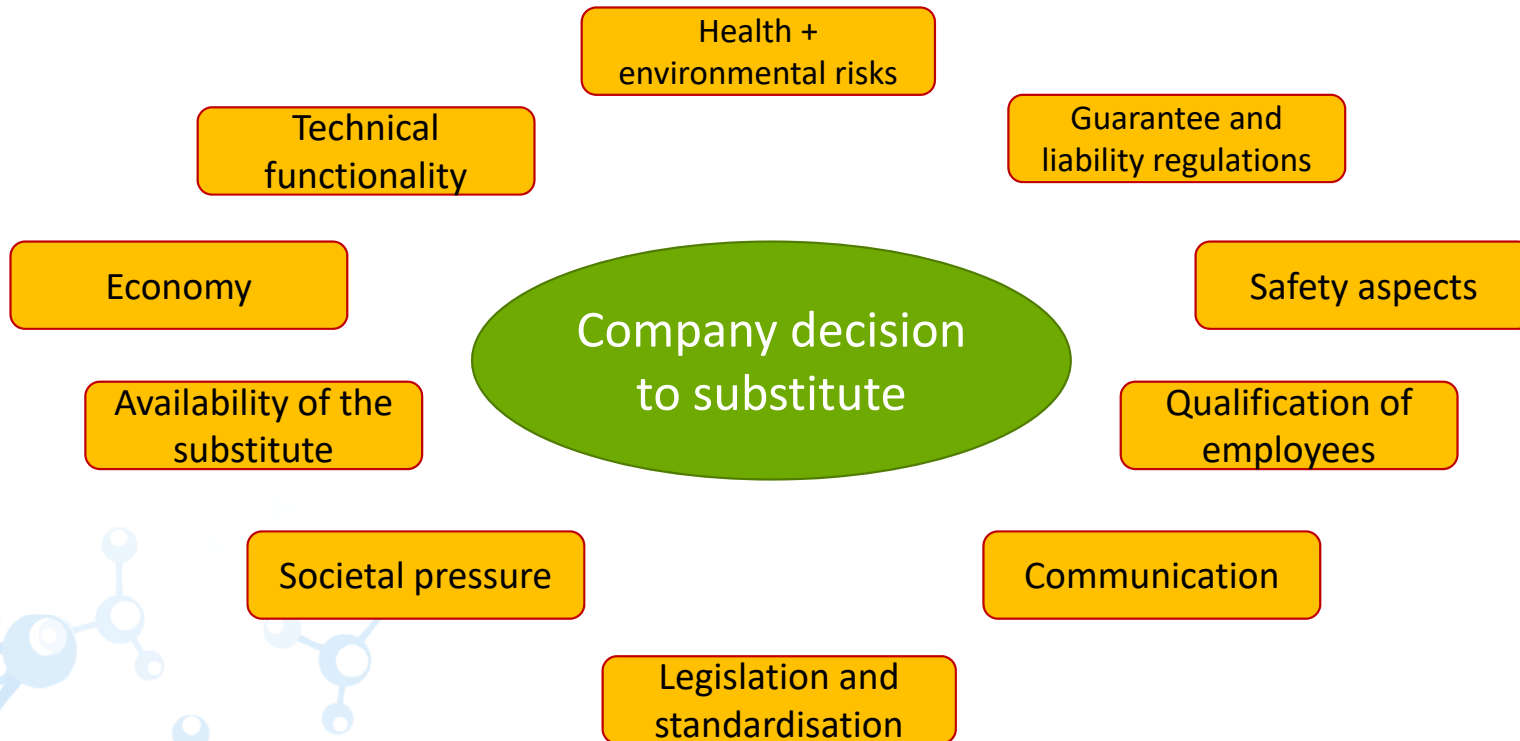


Study for the strategy for a non-toxic environment of the 7th EAP

Sub-study a: Substitution, including grouping of chemicals & measures to support substitution

- **Substitution has always been taken place**, essentially driven by performance requirements and opportunities, e.g. market advantage
- **Regulatory risk management** (REACH&CLP and legal frameworks) forces companies to search for and move to safer alternatives
 - Directly (e.g. restriction, authorisation)
 - Indirectly (e.g. harmonised classification&labelling, registration, eSDS, communication along supply chain, etc.)
- EU's 7th Environment Action Programme: **Union strategy for a non-toxic environment** that is conducive to innovation and the development of sustainable substitutes including non-chemical solutions
- **Circular economy** requires avoidance of substances of concern
- Motivators, e.g. **consumer pressure, avoidance increased legal obligations**

It is not easy!



It is not easy!

Challenges and barriers

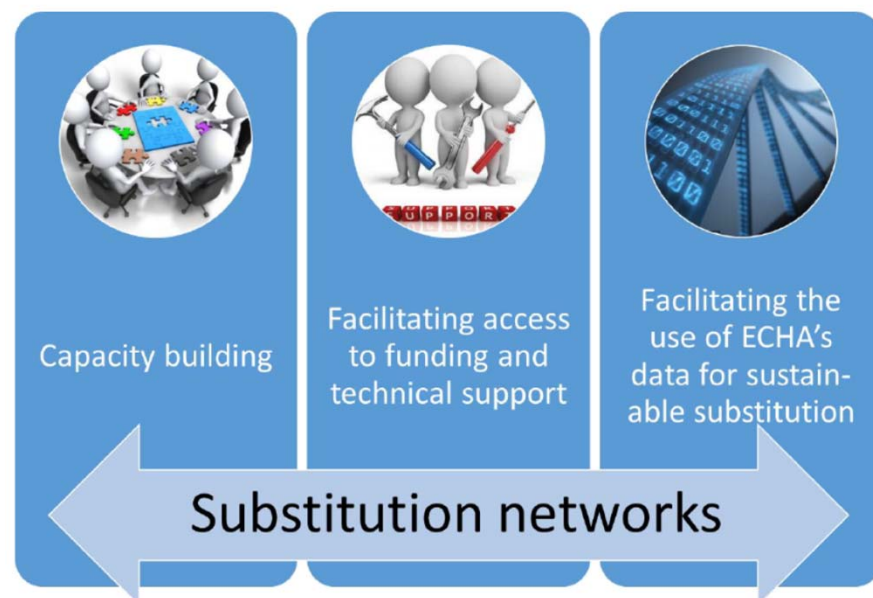
- Technical and administrative restraints
 - Dependency on current installations and need to fulfill certain specified specifications and dependent of approvals by customers or through the entire supply chain
 - Resistance to change, reluctance to experiment with the unknown
 - Fear to regrettable substitutes
- Business and supply chain is global and complex – low transfer of knowledge
 - Stakeholders with very different function, knowledge, needs and expectations
- Lack of research and development capabilities and lack of knowledge/experience with substitution (risk information, alternatives...), lack of time/money
- Contradictory requirements, e.g. legislative approvals
 - How to embrace the broader perspective of sustainability (LCA, CE, green chemistry)?
- Where to start? Which substances/cases should be prioritized?

Substitution is a long process!

0. Motivate sustainable chemical management
1. Identification of undesirable substances
2. Inventory of alternative solutions
3. Assessment and choice of alternative solutions
4. Development of new alternatives?
5. Test pilots, implementation, evaluation and communication
 - Maintain function
 - Requiring quality controls, performance controls and approvals through an entire supply chain

There is support (coming)!

- Activities identified by the EU Commission:
 - Promote **innovation** (non-toxic chemicals, non-chemical solutions)
 - Promote **circularity** (chemical re-use, non-toxic material cycles)
 - Support **substitution** (access to knowledge, support substitution)
- **ECHA substitution strategy***:
 - **Capacity building**; mainly through the facilitation of supply chain workshops at the Member State level
 - Better access to **funding and technical support**
 - Facilitating the **use of registration, classification and risk management data** for substitution purposes
 - Development of **networks** related to the substitution of chemicals of concern
- Member States activities (Swedish substitution centre, National Helpdesk Chemicals substitution)
- OECD Substitution and Alternatives Assessment Toolbox (SAAToolbox, www.oecdsaatoolbox.org)



* ECHA (2018): Strategy to promote substitution to safer chemicals through innovation. ECHA-18-R-02-EN

Thank you for your attention!

Substitution of hazardous chemicals:

Helpdesk training on decision support tools to assess hazard and sustainability of chemicals and alternatives: <http://www.reach.lu/fr/support/centre-de-ressources/evenements/>

New section on Helpdesk website: <http://www.reach.lu/en/substitution/>

"SVHC alert" newsletter: <http://www.reach.lu/en/support/resource-center/newsletter/>