Enhancing Awareness and Implementation of Safe-and-Sustainable-by-Design (SSbD) in European Chemical Practices

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The European Union's long-term vision for chemical policy is increasingly focused on promoting safe and sustainable chemicals as a cornerstone for a green transition. Central to this transition is the Safe-and-Sustainable-by-Design (SSbD) framework[1], recently published by the Joint Research Centre (JRC) and broadly supported by SUSCHEM AT .

Background

The EU's chemicals strategy[2] aims to

- protect citizens and the environment
- boost innovation for safe and sustainable chemicals

Using actions like

- banning the most harmful chemicals in consumer products (allowing only most essential use)
- phasing out the non-essential use of per- and polyfluoroalkyl substances (PFAS) in the EU
- promoting the EU's resilience of supply and sustainability of critical chemicals
- boosting the investment and innovative capacity for production and use of chemicals that are safe and sustainable by design, and throughout their life cycle

JRC Framework – stepwise approach

Step 1 - Hazard assessment (of the chemical or material)

Step 2 – Human health and safety (production and processing)

Step 3 – Human health and environment aspects (in the application phase)

Step 4 – Environmental sustainability assessment

Step 5 – Social and economic sustainability assessment

About BNN

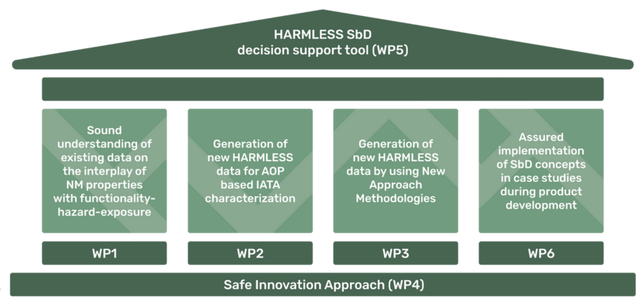
BNN **provides end-to-end solutions** for innovation-driven product development **combining science, technology, regulatory and business-related know-how**. By balancing clients' technical, regulatory and commercial interests **using a sound science-based and strategic approach**, BNN supports your company **along the entire innovation process**.

HARMLESS

Advanced High Aspect Ratio and Multicomponent materials: towards comprehensive intelLigent tEsting and Safe by design Strategies

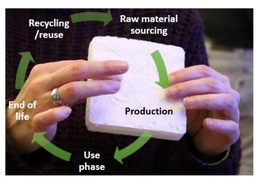
www.harmless-project.eu
01.012021 – 31.01.2025
20 Partners
Total costs 7 999 084 €

Case studies:
Papermaking, Paint formulations, Catalysts, Facade insulation, Agriculture



BreadCell

Upgrading of cellulose fibers into porous materials



www.breadcell.eu
01.04.2021 - 31.03.025
5 Partners
Total costs 3 000 000 €

Pulp based foams are non-hazardous, can be reused, and are biodegradable!
Foaming agents – non-cytotoxic

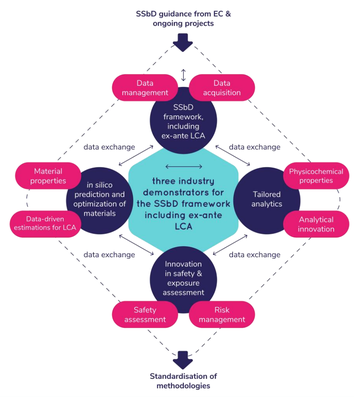
See more: D4.4 - Safety and sustainability assessment of processes and materials I (https://breadcell.eu/images/media/ssb.pdf)

SSbD4CheM

Safe and Sustainable by Design framework for the next generation of Chemicals and Materials

www.ssbd4chem.eu
101.01.2024 – 31.12.2027
16 Participants + 3 Partners
Total costs 7 498 762 €

Case studies:
Automotive, Textile, Cosmetics



Stay tuned

PLANETS

Plasticizers, fLame-retardants and surfactANts: new alternatives validating the safE and susTainable by deSign approach
Horizon Europe funded project with 18 partners
Project kick-off in November 26-27th 2024

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BreadCell grant agreement No 964430
SSbD4Chem grant agreement No 101138475

[1] Caldeira, C., Farcal, R., Garmendia Aguirre, I., Mancini, L., Tosches, D., Amelio, A., Rasmussen, K., Rauscher, H., Riego Sintes, J. and Sala, S., Safe and sustainable by design chemicals and materials - Framework for the definition of criteria and evaluation procedure for chemicals and materials, EUR 31100 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-53280-4, doi:10.2760/404991, JRC128591.
[2] https://environment.ec.europa.eu/strategy/chemicals-strategy_en