

Challenge and Ambition

WP6 CONSUMERS CHEMICAL



CHALLENGE

On the green side, companies are increasingly encouraged to design products that are safe and sustainable from the outset. At the same time, regulatory signals remain mixed. While some frameworks such as REACH CLP developments, the Circular Economy Action Plan, ESPR and the Digital Product Passport highlight a policy ambition to steer design decisions, regulatory implementation is often incremental, delayed or subject to ongoing debate and uncertainty, especially for SMEs. Despite a growing push towards Safe and Sustainable by Design, uptake in practice remains limited: the process functions more as a compliance check than as a guiding design principle. This is largely due to a lack of internal capabilities, design guidance and anticipatory regulatory insight to embed SSbD considerations early in innovation processes. Moreover, circularity stalls where definitions and practices (e.g., waste vs. by products vs. “end of waste”) lack harmonisation, making it harder for companies to share resources and replace harmful substances, even when they want to. Training initiatives are predominantly focused on awareness-raising activities and regulatory compliance, particularly for specific occupational roles.

On the Digital side, adoption is racing ahead of readiness. Generative artificial intelligence, automation, and connected systems present significant potential for improving productivity in formulation processes, regulatory data management, and customer engagement. However, skills related to data analytics, cybersecurity, enterprise resource planning (ERP) and customer relationship management (CRM) systems, as well as AI-assisted formulation, remain insufficiently developed within the sector. Training is still ad hoc in many companies, challenged by time and resource constraints, and hardest to scale beyond office roles into production, again a sharper problem for SMEs. The result is a widening execution gap: digital tools exist, but the capability to use them safely, securely and at scale is still developing.

Abbreviations:

SSbD - Safe and Sustainable by Design
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP - Classification, Labelling and Packaging Regulation
ESPR - Eco-design for Sustainable Products Regulation
DPP - Digital Product Passport
LCA - Life Cycle Assessment
ESG - Environmental, Social and Governance

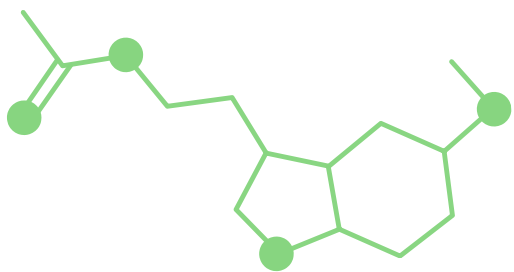
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The sector aims to establish safety- and sustainability-oriented design as the standard practice, leveraging digital tools to accelerate implementation and demonstrate measurable outcomes.

On the Green track, the sector aims to put SSbD and circularity upstream in R&D: decisions on ingredients, packaging and use phase performance will be guided by accessible eco design and LCA skills, robust claims substantiation, and early regulatory literacy. The market transition will be set as a strategic requirement by SSbD-trained CEO and marketers, who will also mobilise the understanding and trust of the customers. Ideally, implementable skills and guidance will be co developed with sector organisations, regions, and VET/HEI partners.

On the Digital track, the ambition is to have every employee have a baseline of digital literacy, while key roles develop depth in AI/data, cybersecurity, automation and ERP/CRM. Learning is modular and stackable (micro credentials, on the job academies), embedded in career paths and continuously refreshed through partnerships. Where the tracks meet, AI, data platforms, digital twins and the DPP should be used increasingly to enable better SSbD decisions, circular design, transparent compliance, and shared governance for evidence, standards and impact.



Abbreviations:

GenAI - Generative Artificial Intelligence
ERP - Enterprise Resource Planning
CRM - Customer Relationship Management
AI - Artificial Intelligence
EU Institutions & Programmes
HEI - Higher Education Institution
VET - Vocational Education and Training