SUSCHEM
European Technology Platform
for Sustainable Chemistry

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SusChem reply to the European Commission Survey on Safe and Sustainable-by-Design case study, Joint Research Centre report and overall Safe and Sustainable-by-Design Framework

1. Background

Upon adoption of the Recommendation on the Safe and Sustainable-by-Design assessment framework (December 2022), SusChem stated its support to the objective of developing a harmonised and comprehensive approach to “safe and sustainable” chemicals and materials and striving for a Safe and Sustainable-by-Design framework that can become a global reference for safe and sustainable innovation and an additional catalyst for the chemical sector to transform towards the 2050 goals.

SusChem also committed to further working with the European Commission during the 2 year testing period, especially also through the IRISS project to identify how the proposed framework could be applied and improved to deliver real results on the ground.

2. Path forward

Following the February 2023 EC workshop on first case study results both from the Commission’s Joint Research Centre (plasticizers in food contact) and industrial partners (non-halogenated flame retardants in ICT and enzymes in textile scouring), SusChem would like to further work with the European Commission on making an integration of the assessment framework into existing R&D procedures and practices feasible:

- The proposed framework as it stands is experienced as complex, highly resource intensive and too distant from innovation practices in the companies as well as extremely data demanding. The generation of FAIR data cannot result in significant additional testing requirements for businesses to report on (incl. SMEs) - this would lead to extra resource and capacity needs. The development of a methodological user-friendly toolbox and withgoing databases will be necessary to have the framework applied at scale, and help to maintain the global competitiveness of the EU industry.

- The European Commission should more clearly link the framework and innovation processes. To ensure that innovation is encouraged and not constrained, the SSbD framework should be evaluated as to whether/how it serves the purpose of Research and Innovation (R&I) steering and continuous process improvement.

Bottlenecks and specific actions for encouraging innovation should be clearly highlighted, including the creation of incentives for the implementation of the assessment framework in industry (e.g. leaner registration processes).

- The SSbD framework should focus on the development of guidance on the systemic impact including design aspects such as circularity, durability and functionality in the context of planetary boundaries as well as the role of e.g. biotechnology in present and future chemical processes. In addition, the broader sustainability and socio-economic assessment criteria should be emphasized. In its current form, the framework puts a lot of emphasis on safety assessment. Safety data shall be required by Reach regulation; Sustainability data is varied in nature and its sources. Sustainability data can include data on emissions from own operations or from the value chain, energy usage, raw material life cycle emissions, i.e. drive the convergence of the chemical sector and the recycling industry.

- It is considered crucial to involve all stakeholders, including SusChem members, in the testing and feedback phase to evaluate the suitability of the framework.

- Information on the upcoming regulatory measures is important to inform the innovation process. The use of cut-off criteria is not the recommended path forward e.g. it would prohibit a demonstrated safe use of certain chemicals and materials with proven sustainability benefits. In addition,

- The framework needs to provide detailed guidance on how to make trade-off decisions from a systemic perspective, which are a fundamental aspect of any innovation process. Specifically, it should address the trade-offs between technical performance of chemicals and materials and immediate sustainability aspects. It's important to note that prioritizing immediate sustainability goals over technical performance levels could have regrettable long-term effects on sustainability. Therefore, the framework should consider the potential impact of substitutions on longer-term sustainability goals.

Ideally, a straightforward and “easily” applicable assessment framework for safe and sustainable-by-design chemicals and materials would be developed, proposed and advocated for **in co-creation** between the European Commission, industry and academia (see e.g. Cefic’s previous work on such a framework, see also OECD Malta initiative, originally devised for nanomaterials but to be extended to advanced materials)....

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