

Safe By Design, Nanomaterials and Production Chains: The Challenges of Technical Standards in a New European Project

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- Is my nanomaterial safe?
- How can I check it once developed?
- What happens if the material changes during the life-cycle?
- Do there exist material and process alternatives to make it safer?



Thinking and designing safe nanomaterials is not a joke. These are just some of the questions that the world of "nano innovators" must answer. Lots of European studies want to define the concept of "safe-by-design" for nanomaterials. There is still no supply chain approach to assess the impact from this concept with respect to production processes and value chains of nanomaterial-based products.

Horizon 2020 ASiNA "Anticipating Safety Issues at the Design Stage of NAno Product Development" aims to implement a "safe-by-design" strategy for the development of low-risk and safe nanomaterials for human health throughout the life cycle of the product.

But not only. It is also a matter of helping European SMEs to increase the quality, safety and performance of nano-enabled products, promoting competitiveness on international markets.

ASiNA will analyse information collected through the product life-cycle, by addressing all the design dimensions: functionality, production technologies, safety, environmental sustainability, cost effectiveness and regulatory requirements, acquiring elements within the companies involved in the project as "pilots" and, more generally, from the exposure scenarios involved.

To verify the impact and functioning of the ASiNA methodology, the project will be tested on two pilot cases for the production of:

- Anti-microbial / anti-biofilm / depollutant coatings for the containment of organic and biological pollutants (viruses, bacteria)
- Nanostructured capsules delivering anti-microbial / anti-ageing phases in cosmetics

The project, coordinated by the ISTEC department of the CNR, is made up of 21 partners including research centres, universities, private companies, European and non-European NGOs, based in 8 different countries.

The title of the call of proposal "Safe for design: from science to regulation", highlights the central role of technical standardization. The Italian Organization for Standardization participates in the consortium to build a strategic roadmap for standardization, with the aim of transferring research results and outcomes of innovation activities into technical standards, so improving long term impacts of Safe-by-Design approach.

ASiNA has the ambition to promote consistent, applicable and scientifically sound Safe-by-Design nano-practices, considering all the of nano-enabled products design dimensions: functionality, production technologies, safety, environmental sustainability, cost effectiveness and regulatory requirements, in line with research responsible innovation policy.