

MOTIVATION



The main aim of the **NanoSafePACK project** is to develop a best practices guide to allow the safe handling and use of nanomaterials in packaging industries, considering integrated strategies to control the exposure to nanoparticles (NP) in industrial settings, and provide the SMEs with scientific data to minimize and control the NP release and migration from the polymer nanocomposites placed on the market.

To **achieve** this aim, a complete hazard and exposure assessment will be conducted to obtain new scientific data about the safety of polymer composites reinforced using nanometer-sized particles.

The proposed work will focus on a selected set of nanometer-sized materials (nanoclays and metal oxide NP) relevant to the packaging sector. Results from the exposure and hazard assessment studies will be used to compile a risk assessment of the use of NP in the packaging industry

IMPACT OF THE PROJECT

NanoSafePack will impact transversally the Nanomaterials market, grafting a Virtuous circle across the whole value chain:

VALUE CHAIN

R&D Lab for Nanoparticles/Nanomaterials

Safer design, manufacture and handling of Nanoparticles



Supplier

Nanoparticles Producers

Safer manufacture and handling of Nanoparticles



Supplier

Nanomaterials producers (NPs users)

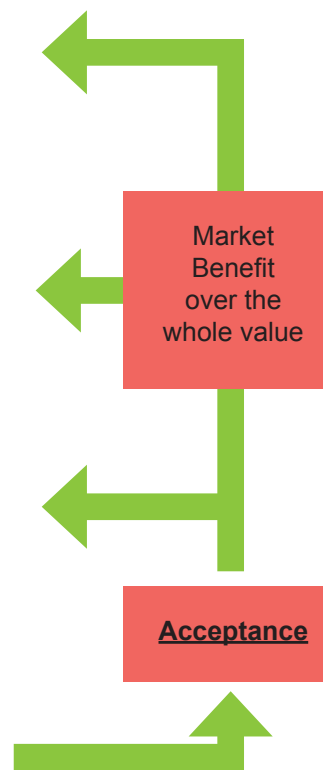
Safer design, manufacture, handling and market of nano-enable products.



Supplier

Consumer

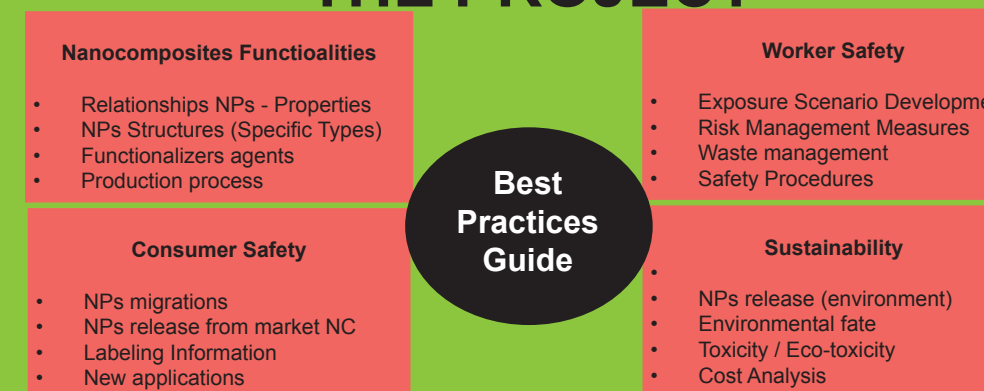
Safer use of nanomaterials (designed to be not dangerous, both for **human** and for **Environment**)



All the links of the value chain get benefits from the outcomes of **NanoSafePack**. Workers and Consumers **Awareness** and **Acceptance** of Nanoparticles and Nanoenabled materials will provide major effects on many important areas related with nanomaterials, in particular:

- Human Health (both of workers and Consumers)
- Environmental sustainability (development of a full LCA, considering also the waste management strategy)
- Economy (Customer's will to pay for nanomaterials will increase)
- Society (fainting of the bad feelings on Nanotech safety)
- Regulatory issues (covering lacks of regulation for the packaging industry).

END RESULTS OF THE PROJECT



The end results to be achieved at the end of the project considering the roles of the project partners can be split as follows:

Supply chain actors (i.e. NMs manufacturers, Nanocomposite compounders, packaging manufacturers)

- Better knowledge on the potential use of nanoparticles as nanofillers for packaging applications, scale up solutions and economic rentability in terms of market prices and future business opportunities
- Reliable data on the hazard properties of the most common nanofillers, including a list of nanofillers and polymeric matrices that can be considered safer on the basis of the tested toxicological and migration potential
- Easy to implement and affordable measures to control the exposure to NMs, guaranteeing the safety of workers dealing with nanomaterials
- New Business opportunities

Trade Associations

- Promotion of new support services focused on technical and legal advice on issues directly relevant to the use of nanofillers, including help desks services, training, guidance and dissemination materials
- Better understanding of the environmental, health, safety and regulatory issues related with the use of nanofillers in the packaging industry
- Digital and printed versions of the NanoSafePack Best Practices Guide as a tool to promote the technological and sustainable development of the packaging sector at National and European Scale
- A structured compendium of free webinars and workshops to support the training of end users and stakeholders in the use and implementation of the Best

Research, Technological and Development Performers – RTDs

- A complete description of the adverse effects posed by the use of nanofillers based on their physicochemical, toxicological and ecotoxicological properties
- New knowledge about Migration and release of nanoparticles in the polymeric matrix, providing the SMEs with scientific and valid data to select the less hazardous nanofillers
- A complete description of the current exposure scenarios across the nanocomposites life cycle, including an in depth description of the existing operational conditions, efficient RMMs and measured exposure levels
- New information on the release rates to air, surface fresh and marine water, waste water and soil for each relevant stage on the life cycle
- New knowledge on the airborne behaviour of the target NMs, including new data on their aggregation/agglomeration patterns and deposition factors under the specific operative and environmental conditions of use presented in the nanocomposites production facilities

Partners



ADDITIONAL INFORMATION

www.nanosafepack.eu

Contact: Jose Luis Romero, Coordinator

E-mail: JoseLuis.Romero@plasper.com

NanoSafePACK is a Collaborative Project funded under the call Research For SME Association, SME-2011-2 Theme of the European Commission's 7th Framework Programme managed by REA-Research Executive Agency <http://ec.europa.eu/research/rea> ([FP7/2007-2013] [FP7/2007-2011]) under grant agreement n° 286362



NanoSafePack



Development
of a **best
practices
guide** for the safe
handling and use of
nanoparticles in
packaging industries