NANOFORCE Central Europe partnership map

INTRODUCTION

The Central Europe project NANOFORCE started on 1st of May 2011 and ended at 31st of January 2014 (33 months). The project aims at improving cooperation between Industry, Finance, Research andPublic Authorities in order to foster the sustainable development of nanotechnologies in Central Europe.

Nanosciences, research & development continuously improve the environmental, health and safety knowledge and performance of technologies, processes and products over their life cycles in order to contribute to people and the environment.

NANOFORCE follows the responsible approach towards production, development and eventual commercialisation of the products to proactively cooperate with the legislators and the competent authorities and to adopt the values and behaviours of transparency of knowledge and prevention of benefits for workers and the environment. Furthermore, NANOFORCE wanted to foster the collaboration and interdisciplinary research on nanomaterials (in the frame of REACH regulation) and to turn the most promising laboratory results into innovative and practical applications.

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This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.
EU requirements, although differences can be found, depending on the European market; nevertheless, REACH is the most applicable regulation for nanomaterials in the European Union. The current regulations for nanomaterials in the European Union are part of the broader regulatory body for nanomaterials: better implementation and de- nition of nanomaterials was presented by the European Commission in 2011. When entering the European market, products are subject to standard environmental and safety testing to ensure the quality of raw materials and production processes. These regulations are under continual revision and to be made available to the EU commission. The hazardous substances must then be substituted by environmentally friendly alternatives, if required. Within the NANOFORCE project specific characterisation and toxicology testing methods for nano-materials were developed and validated. Results are generated by standardized in vitro testing methods for nano-materials. The knowledge gathered within the work of NANOFORCE lead to the following conclusions:

**Safety Data Sheets (SDS) and Exposure Scenarios (ES) have been developed for three nanomaterials. These results will be cross validated by scientific institutes participating in the project using the comparison of results based on the same data sources. When performing risk assessment studies, the key steps in this scenario were elaborated in a pilot safety assessment. The whole strategy for the risk assessment of the selected nanomaterials was developed using a life cycle analysis. A group of experts on nanotechnology and the guideline for the responsible use/production of nanomaterials developed specific characterisation and toxicology testing methods for nano-materials.**

**The knowledge gathered within the work of NANOFORCE lead to the following conclusions:**

**Nanomaterials (natural, incidental and engineered) are used in various applications due to their specific effects resulting from their unique size, morphology, and surface area. Nanotechnology is a broad field ranging from nanomaterials used in cosmetics to semi-conducting materials used in electronics. To ensure compliance with relevant European legislation, safety and health implications of nanomaterials must be evaluated case by case. While the European regulatory framework is growing slowly but steadily, new nanomaterials are constantly being introduced to the market.**

**Regulations with relevance for nanomaterials include amongst others the following:**

1. **Regulatory framework for the management of chemical substances and mixtures:** The registration, evaluation, authorisation and restriction of chemicals (REACH) and the classification, labelling and packaging (CLP) regulation.
2. **Regulatory framework for the management of occupational health and safety:** The occupational safety and health at work regulation (89/391/EEC).
3. **Regulatory framework for the management of animal testing:** The animal testing regulation (86/609/EEC).
4. **Regulatory framework for the management of personal protective equipment:** The personal protective equipment regulation (89/686/EEC).
5. **Regulatory framework for the management of safety and health in the workplace:** The safety and health at work regulation (98/24/EC).
6. **Regulatory framework for the management of safety and health for workers:** The safety and health at work regulation (98/24/EC).
7. **Regulatory framework for the management of safety and health for workers:** The safety and health at work regulation (98/24/EC).

**NANOFORCE Overview Recommendations for the European Commission**

**Guidelines for the responsible use/production of nanomaterials**

While the nanomaterial product specific characterization and toxicology testing methods for nanomaterials (natural, incidental and engineered) are used in various applications due to their specific effects resulting from their unique size, morphology, and surface area. Nanotechnology is a broad field ranging from nanomaterials used in cosmetics to semi-conducting materials used in electronics. To ensure compliance with relevant European legislation, safety and health implications of nanomaterials must be evaluated case by case. While the European regulatory framework is growing slowly but steadily, new nanomaterials are constantly being introduced to the market. New chemical entities are constantly being introduced to the market, and not act on humans or animals as nano-objects. Present knowledge of nano-science tells us that in most cases nanomaterials will agglomerate and or dissolve, and nano-products environmental and health impacts must be evaluated case by case. Nano-science will help to develop new tests for nano-products. The knowledge gathered within the work of NANOFORCE lead to the following conclusions:

**Safety Data Sheets (SDS) and Exposure Scenarios (ES) have been developed for three nanomaterials. These results will be cross validated by scientific institutes participating in the project using the comparison of results based on the same data sources.**