

Technology for nanosafety challenges:



Regulatory compliance

Regulations; standards; worker and user safety; measurement protocols; lifecycle analyses; waste and emissions management



Proactive development of nanomaterials markets

Societal acceptance; awareness-raising; education and training; nanomaterials impact analyses (air, water, soil)



CEA Tech technology

Safer by Design

Characterization

Lifecycle analysis

Training and certification

Detection, measurement, and monitoring

Biomarkers development

Incident management

Remediation

Toxicology



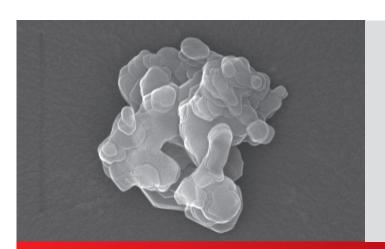
Manufacturing and process safety

Safer by Design processes; quality control; process and worker-exposure monitoring; industrial health and safety



Product competitiveness

Safer by Design products; product performance enhancements (to minimize release of nanomaterials into the environment); recycling



CEA Tech can help the following businesses:

- Manufacturers of nanomaterials
- Companies that integrate nanomaterials in industries such as transportation, construction, chemicals, steel, microelectronics, aerospace, and others
- Waste collection, sorting, and treatment companies
- Environmental and health monitoring organizations
- Health and safety officers / prevention workers

Here are some of the ways CEA Tech can support your development:





Nanomaterials and Safer by Design processes

Nanomaterials and Safer by Design; choice of powders vs. solutions; surface engineering; synthesis and supply of calibrated reference nanoparticles

Characterization

Characterization of substances (including in complex environments); regulatory compliance systems; process optimization; product quality control and monitoring; nano-object identification, PFNC (Nanocharacterization platform)

Workstation and environmental measurement

Detection, identification, measurement, and monitoring; detection of air and water emissions

Confinement assessment and optimization

Worker protection; emissions control

Lifecycle analysis and improved recycling

Emission testing in real-life conditions; abrasion resistance; dissemination in the environment and traceability; end-of-life product recycling

Toxicology and ecotoxicology

Toxicological studies (advanced and for regulatory compliance)

Biomarkers development

Research about biological exposure indicators at the Medical Biology Laboratory (MBL)

Nanosafety consulting

Analysis of existing safety systems in normal operating and incident conditions; assessment of personal and collective protective equipment and recommendations for use; risk assessments; employee and community education and outreach; regulatory compliance

Continuing training via the CEA's nuclear engineering school (INSTN)

Continuing professional development, inter-company training courses, and custom training courses including nanosafety awareness-raising; NanoCert certificate programs in partnership with INERIS for operators (OperaNano), prevention workers (NanoPrev), incident-response workers, and emergency workers

Contact: pns@cea.fr / www.nanosafety-platform.com