

GUIDE *nano*



DESIGN AND APPLY THE MOST APPROPRIATE RISK ASSESSMENT &
MITIGATION STRATEGY FOR A NANO-ENABLED PRODUCT



Project funded from the European Union's Seventh Framework
Programme (FP7/2007-2013) under grant agreement №604387.

ABOUT THE PROJECT

The GUIDEnano project generates a risk assessment web-based tool, which incorporates as well guidance on the selection of risk management options. To reach these goals, the project is building upon the state-of-the-art on risk assessment and management by validating critical assumptions in the risk assessment process, generating new predictive models, and novel risk management solutions.

GUIDEnano develops a web-based guidance software for nanomaterial producers and users, it includes:

- Series of databases
- Decision trees
- Mathematical models
- Support in the prediction of release
- Exposure including environmental fate models
- Human and environmental hazard



METHODOLOGY

Develop methodologies to evaluate the risks of a wide diversity of nano-enabled products on human and environmental health throughout their life cycle.



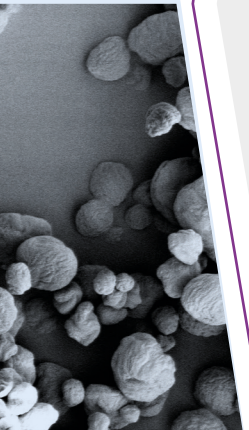
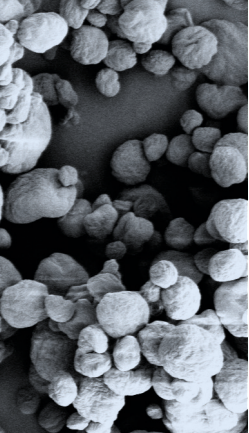
INNOVATION

To develop innovative solutions to reduce the identified risks and provide a wide range of risk mitigation strategies and guidance on the selection of the most appropriate measures for each scenario.



RISK EVALUATION

To integrate the risk evaluation and mitigation strategies into the GUIDEnano Tool and carry out an iterative process of performance testing, feedback and improvement to validate its suitability and applicability.



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THE FOLLOWING CASE STUDIES
WERE CARRIED OUT DURING THE PROJECT:

- ▶ Photocatalytic TiO_2 NP in hot bituminous mix
- ▶ Nanocellulose for food packaging
- ▶ Nanosilver for antibacterial textiles
- ▶ MWCNT for enhanced performance polymers in the automotive industry
- ▶ TiO_2 nanocoating for household products
- ▶ ZnO NP for antifouling paints
- ▶ Al_2O_3 - SiO_2 NP for ceramic floor tiles with antislip coating
- ▶ FeO NP for soil remediation

THE GUIDENANO TOOL

gnlatest.guidenano.eu

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GUIDEnano version 2.6

This Tool will guide the nano-enabled product developers (industry) into the design and application of the most appropriate risk assessment & mitigation strategy for a specific product.

Learn more >

Getting started

To use this tool and get started you will need to create a new case or open an existing one via

Cases >

Project

This tool is developed within the GUIDEnano project funded from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement N604367

GUIDEnano project >

Development

This tool is developed using ThinkWorks Intelligent Objects engine.

ThinkWorks >

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GUIDEnano case

(Nano)materials

Below you can add "+" the different (nano)materials and substances relevant before, during and after the life of the nano enabled product. Think of synthesized nanoparticles, manufactured materials with nano features, released nanoparticles once released into the environment. But also the (nano)materials, chemicals and substances used for toxicity tests and read across.

Scenario relevant (nano)materials:	name	description	category	name (contributors)	hazard statements
	MWCNTs	Multiwalled Carbon Nanotubes with 3-12 walls as a	nanotube	MWCNTs	
	PA66 Compound containing MWCNTs	Polyamide 6.6 Glass fibre reinforced + MWCNTs	nanocomposite	MWCNTs	
+ select -					

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Risk assessment

Human health

Case Activities (Nano)materials Compartments Exposure Hazard Assessment Risk Assessment

Human health

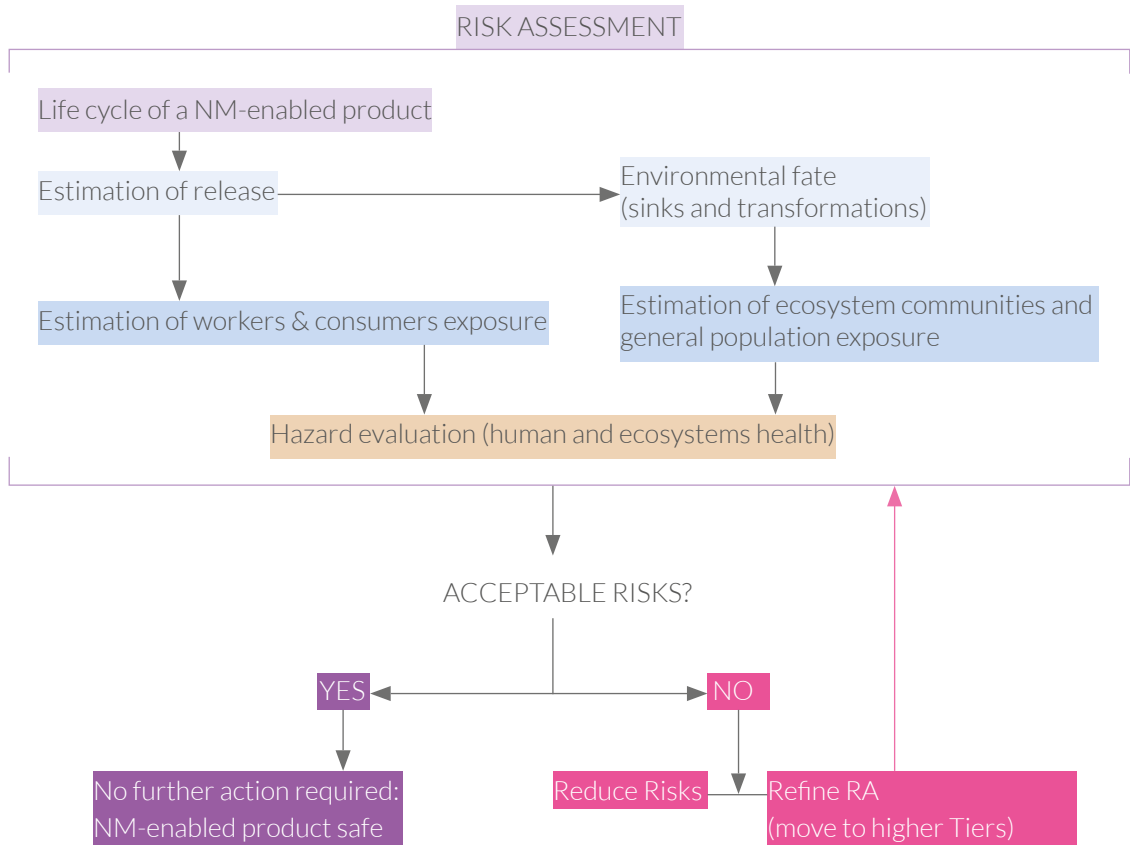
Human exposure		Endpoints human hazard assessment											
population exposure	repeated dose toxicity	carcinogenicity	mutagenicity	reproductive toxicity	acute toxicity	absorption/accumulation/elimination	sensitization	irritation/corrosion	developmental toxicity				
	inhalation oral dermal	inhalation oral dermal		inhalation oral dermal	inhalation oral dermal		respiratory oral skin	skin	inhalation oral dermal				
Living near: Production Plant													
- Exposure for population near production plant													
Worker: Extrusion													
- Extrusion Dept. workers													
Living near: Incinerator													
- Living near incineration plant													
Consumer (diesel filter)													
- Consumer Exposure (diesel filter)													
Human													
-													

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GOAL:

DEVELOP METHODOLOGIES TO EVALUATE THE RISKS OF NANO-ENABLED PRODUCTS ON HUMAN AND ENVIRONMENTAL HEALTH THROUGHOUT THEIR LIFE CYCLE.







TORRECID



Servià Cantó



HEMPEL

inoTEX



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PERFORMANCE
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PlasmaChem



HIGH
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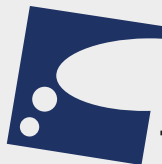
Honeywell



Pinsent Masons



NanoServices



ThinkWorks



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End date: April 2017



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