NanoFASE Deliverable D1.2

Report on the Pathway Analysis

Contributors	Partner
V., Pomar-Portillo, A., Vilchez Villalba, S., Vázquez-Campos	LEITAT, Spain
B., Park	GBP, United Kingdom
A., Crossley	UOXF.DJ, United Kingdom
C., Cortés	FCCCO, Spain
V., Puntes	AppNano, Spain
O., Chybová	ITEX, Czechoslovakia
M., Santiago	HEMPEL, Spain
S., Tang	PP, United Kingdom
A., Kinart	AMEPOX, Poland
T., Lederer	TUL, Czechoslovakia

Research Report Summary

Nano-enabled products presence in the market has been increasing in the last years and now we can find them in a wide range of applications. For this reason, there is a need to predict their impact on the environment and assure its safety. In order to understand the behaviour/transformations of engineered nanomaterials (ENM) in the environment, which is the core of NanoFASE project, it is necessary to first analyze the entire life cycle of nano-enabled products, from the synthesis to the end-of-life stage, and evaluate in which situations ENM release to the different environmental /technological compartments can occur. In this deliverable, a report on the pathway analysis of different nano-enabled products proposed as case studies in the project has been performed. ENM evaluated are TiO_2, Cu_2O, Cu, ZnO, Ag, Fe_3O_4 and Fe^0. The information included is the result of an active communication with industrial partners in the consortium, as well as data gathering from literature and from other European projects, which allowed obtaining accurate and realistic details about manufacturing processes, product composition, and expected use and end-of-life scenarios of the products. The overall aim of this report is to establish the pathways that ENM within each case study might follow, and therefore to identify

The NanoFASE project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 642007. This publication reflects only the authors' view and the Commission is not responsible for any use that may be made of the information it contains.

the receptor compartments in which ENM will end-up. ENM release forms and quantities have been identified when available, and also further transformations have been predicted, based on current state of the art. This comprehensive analysis can serve to prioritize the experimental, analytical and modelling developments in the different work packages of the project.

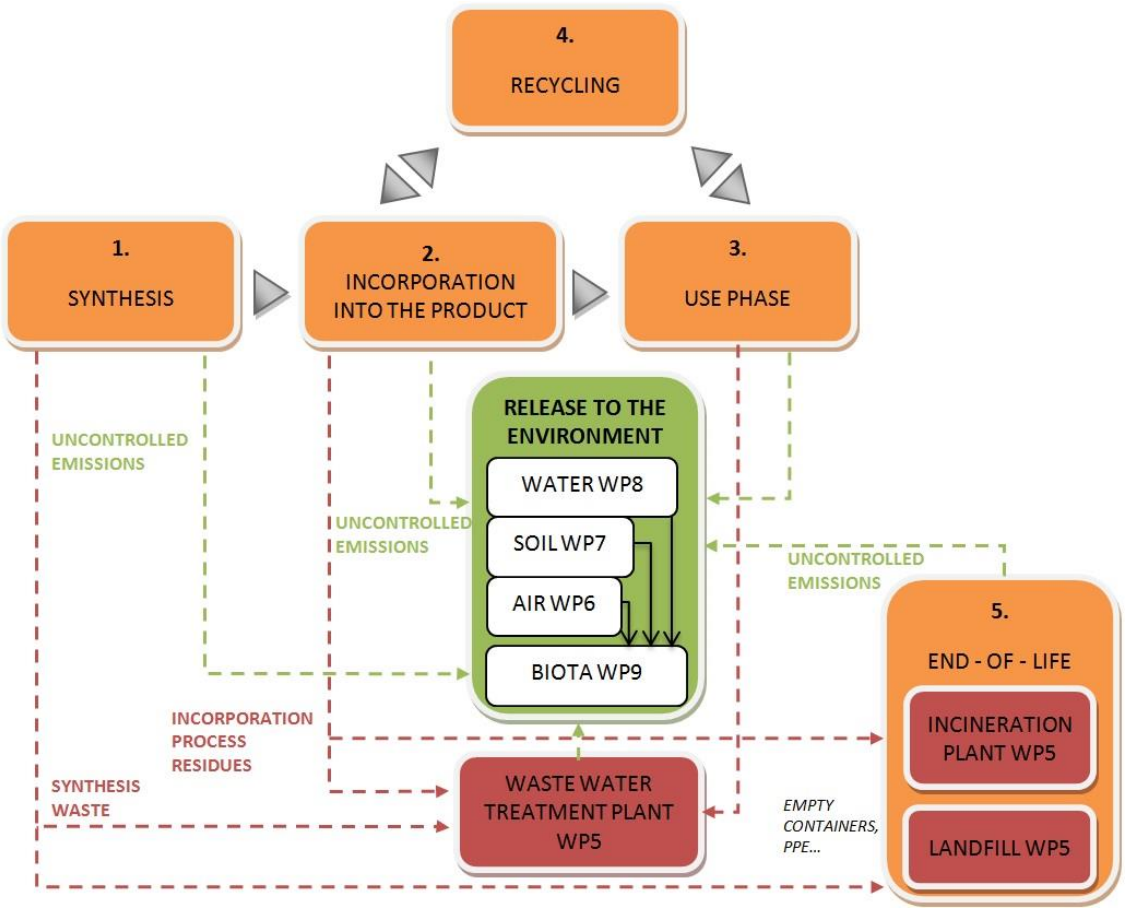

Figure 1– General life cycle pathway analysis

For more information you can contact:

Project office email: NanoFASE@ceh.ac.uk

Deliverable Authors: Vicenç Pomar-Portillo (vpomar@leitat.org), Alejandro Vilchez Villalba (avilchez@leitat.org), Socoro Vázquez-Campos (svazquez@leitat.org)

Work Package Leader: Alison Crossley (alison.crossley@materials.ox.ac.uk)

Foreseen publication date of the full deliverable: November 2017; waiting for scientific publication.

Project Website: www.nanofase.eu August 2017

NanoFATE is supported by the European Commission under the Seventh Framework Programme. Theme 4: NMP – Nanosciences, Nanotechnologies, Material and new Production Technologies and Theme 6 – Environment (including Climate Change). Gant Agreement no. CP-FP 247739 NanoFATE