NANEX WP2 – Exposure Scenarios Summary

Please note this ES was not developed as part of a full risk assessment process, and may not necessarily describe exposure conditions for which there are no risks to human health and the environment

Standard Exposure Scenario Format 1: For Uses Of Substances By Workers

Title:	Handling small quantities of CNT	**Date:**	03/06/2010
SubstanceType	CNT	**Entered By:**	CEA

Internal reference ID:	

List of all use descriptors related to the life cycle stage and all the uses under it; include market sector (by PC) if relevant:

SU3, PROC15

List of names of contributing exposure scenarios and corresponding PROCs/PCs

CES 1: Handling (e.g weighting, pouring) small quantities (few grams) of CNT

CES 1: Name of contributing exposure

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Further specification

Product characteristics

Pure CNT

Amounts used

per task: few grams

Frequency and duration of use/exposure

daily : 15 minutes

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Indoor handling, Ambiant temperature 10m2

Technical conditions and measures at process level (source) to prevent release

Product is stored on a bench

Technical conditions and measures to control dispersion from source towards the worker

Sucking air points into the hood

Organisational measures to prevent /limit releases, dispersion and exposure

Conditions and measures related to personal protection, hygiene and health evaluation

respiratory protection FFP3 mask, nitrile gloves, plastic protection for arms

Additional good practice advice (for environment) beyond the REACH CSA

Exposure Estimation

Team : CEA Grenoble – NanoSafe 2 program – Arnaud GUIOT, Dominique LOCATELLI, Eric ZIMMERMANN
Sampling equipments : CPC 3785 TSI, CPC portable-TSI- ELPI DEKATI, SMPS GRIMM, FMPS 3091 TSI, NSAM 3550 TSI
Results :
Ventilation flow rate 1150 m3/h
Measure of the background: measurements were high and unsteady, between 20 000 p/cm3 and 80 000 p/cm3. SMPS indicates a bimodal distribution : a peak centered about 10 nm and a second aroud 40nm.
Measured during handling: Results point out a changing the background up to 100 000 p/cm3. Fluctuations are mostly caused by particles with a size of about 40 nm and a peak at 10 nm occasionally observed: Sizes of particles are the same than those observed during background measurements so they could'nt have been attributed to the presence of Carbon NanoTubes.

References