

## **Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals**

**Sub-Committee of Experts on the Globally Harmonized  
System of Classification and Labelling of Chemicals**

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Item 2 (f) of the provisional agenda

**Classification criteria and related hazard communication:  
nanomaterials**

## **Review of the applicability of the GHS classification criteria to nanomaterials**

### **Transmitted by the expert from Finland on behalf of the Nordic classification group**

1. The purpose of this informal paper is to inform the Sub-Committee on the finalisation of the Nordic project 'The applicability of the GHS classification criteria to nanomaterials' introduced in informal document INF.35 (36<sup>th</sup> session). The project reviewed the applicability of the GHS to manufactured nanomaterials taking into account the progress of international scientific work by:

- (i) evaluating data from the OECD/WPMN dossiers and other sources (e.g. the NanoReg project, the NanoSafety Cluster project, REACH registrations and open literature) for four selected nanomaterials
- (ii) assessing the (non-)applicability of the current GHS classification criteria for the data and
- (iii) discussing whether the criteria for classification were fulfilled for the specific human health hazard classes.

The aim of the project was to support the work of the GHS Sub-committee with regard to reviewing the applicability of the GHS classification criteria to manufactured nanomaterials.

2. The project was conducted by the Department of Environment and Toxicology, DHI A/S, Denmark and was coordinated by The Nordic Classification Group under the auspices of the Nordic Chemical Group of the Nordic Council of Ministers and were co-funded by TUKES (Finnish Safety and Chemicals Agency). The Nordic Classification Group is a network of government officials representing the Competent Authorities for the CLP Regulation in Denmark, Finland, Iceland, Norway and Sweden.

3. Four nanomaterials were selected for the project to represent differences with respect to chemical composition, shapes, water solubility, specific surface area and density. Based on an initial screening of the available data hazard classes to focus the assessment on were determined for each nanomaterial. The nanomaterials and the selected hazard classes were:

SWCNT: Acute toxicity, Eye irritation, STOT RE, Germ cell mutagenicity  
(Single-Walled Carbon NanoTubes)  
Nano silicon dioxide: Acute toxicity, STOT RE  
Nano silver: Acute toxicity, Skin sensitisation; STOT RE  
Nano zinc oxide: Acute toxicity, STOT RE

For each of the hazard classes the available test data were summarized and evaluated with respect to:

- (a) Applicability of the test methods
- (b) Applicability of the GHS criteria and proposed classification
- (c) Identified data gaps and uncertainties
- (d) Need for revision of GHS criteria or further guidance

The results are presented in the report “The applicability of the GHS classification criteria to nanomaterials.”

4. The final project report is to be found at the webpage of the Nordic Council of Ministers and can be downloaded from the site:

<http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1315194&dswid=1118>

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