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**ENVIRONMENT DIRECTORATE
JOINT MEETING OF THE CHEMICALS COMMITTEE AND
THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY**

**DOSSIER ON TITANIUM DIOXIDE
- PART 4 - NM 102
ANNEX 1**

**Series on the Safety of Manufactured Nanomaterials
No. 54**

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SOP – Preperation of a NM 102-Suspension Version-Nr.: 1 Date of creation: 30.04.2012 Page: 1 of 3	- S O P -	Chair of Environmental Biology and Chemodynamics (UBC), RWTH-Aachen, Worringerweg 1, D – 52074 Aachen
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Standard Operating Procedure	
Title:	Preparation of a NM 102-Suspension
Policy:	Description of the preparation of a NM 102-suspension.
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1 Introduction and Aim

The aim of this guideline is to describe the preparation of a NM 102-suspension.

2 Materials and Instruments

- Ultrasonic probe (e.g. Sonoplus 200 W, BANDELIN electronic GmbH & Co. KG, Berlin, Germany)
- 250 ml beakers for the suspensions
- Demineralized water for the suspensions
- General labware
- NM 102 (Millenium Inorganic Chemicals A Cristal Company, Thann, France; material was provided by the Working Party of Manufactured Nanomaterials (WPMN) of the OECD)

3 Procedures and Descriptions

3.1 Test Beakers

Nanomaterial suspensions are prepared in commercially available 250 ml beakers.

3.2 Preparation of the Nanomaterial-Suspension

The nanomaterial is weighed and then stirred into demineralized water with a spatula. Next, the ultrasonic probe is immersed 1.5-2 cm into the suspension. Samples are treated with pulsed ultra sound waves (0.2 s pulse, 0.8 s pause; 100% power) for 15 min. To prevent heating of the suspension the beaker is placed into an ice bath. The pH value of the suspension is not adjusted, because preliminary experiments showed that the addition of NaOH or HCl led to direct sedimentation of the particles. The ultrasonication time must be adapted to the volume of the prepared suspension, diameter of the beaker glass, the concentration of the nanoparticles and the rated power of the ultrasonic instrument.

4 Collection of Raw Data

Following raw data has to be collected:

- Preparation of the nanomaterial-suspension

5 Safety Recommendations

The safety recommendations for handling the test substance are listed in the specific safety data sheets.