

NANoREG evaluation: Fish acute exposure to TiO₂, ZnO and SiO₂

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The Laboratory of Ecotoxicology and Biosafety from Embrapa Environment participated in nanomaterial ecotoxicity evaluation inside the NANoREG approach. Toxicity test were performed with *Brachydanio rerio* (zebrafish), according to Nanoreg SOPFish, Acute Toxicity Test for NANoREG core nanomaterials, Version 1 (Souza, Freitas and Zucolotto, 2015). Fish were maintained in reconstituted water (pH 7±0.5, conductivity 600±50 mS/cm, 28°C ± 1°C), under a 14/10h light /dark cycle, they were not feed during the test. The Nanoreg material tested were ZnO (2883578/JRCNM01101a/99070), TiO₂ (2883578/ JRCNM01001a/990407) and SiO₂ (PRA02/7625, 7627, 7629, 7630). A nanomaterial stock suspension of 1 g/L in ultrapure water was sonicated during 15 min, 400 W/L, 20 kHz before preparing the test suspension. All materials were tested at a maximum concentration of 100 mg/L with and without NOM Suwanee River (10 mg/L). Fish were exposed in a proportion of 1.0 g fish/L during 96 hours in a static system with constant aeration. Animals wereevaluated concerning mortality and behavior abnormalities (loss of equilibrium, swimming behavior, respiratory function, etc.). There was no mortality or abnormal behavior. So, the estimated LC₅₀ is greater than 100 mg/L to all nanomaterials tested. Results obtained by these SOP were useful to provide information for regulatory decisions. **Acknowledgements:** FAPESP grant 2014/01995-9 and 2014/12891-0, Embrapa, NANoREG