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Nanotechnologies — Compilation and description of sample preparation and dosing methods for engineered and manufactured nanomaterials

Nanotechnologies — Compilation et description de la préparation des échantillons et des méthodes de dosage pour les nanomatériaux d'ingénierie et manufacturés



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Foreword

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The committee responsible for this document is ISO/TC 229, *Nanotechnologies*.

Introduction

This document provides guidance regarding the preparation of nanomaterials for toxicological, including eco-toxicological, testing. The goal of this document is to assist health and environmental scientists and scientists and experts from other disciplines to understand, plan, choose and address issues relevant to nanomaterials before and during conducting toxicological tests. These issues include the effects of the properties of the material on preparation methods and of the media into which the samples of nanomaterials will be added. Failure to consider these effects might lead to erroneous conclusions regarding the relationship between the nature of the nanomaterial and observed toxicological responses. In particular, the composition and other characteristics of test media can affect the dose to which an organism that is the subject of a test will be exposed. Information on preparation of the test material is necessary prior to any biological or ecological evaluation. Information such as this is consistent with other ISO documents. For example, ISO 10993-18^[1] specifically addresses the evaluation of the chemical characterization of materials used in medical devices, ISO 14971^[2] specifies that a toxicological risk analysis should take into account the chemical nature of the materials, ISO/TR 13014^[3] addresses issues pertaining to the materials themselves and ISO/TS 19337^[55] points out the need to clarify whether observed toxic effects come from tested nano-objects themselves or from other uncontrolled sources. Some examples are provided of methods that establish test conditions that are relatable to environmentally relevant conditions.

This document uses a number of technical terms which have been defined earlier in other documents. Some of these terms have been defined in multiple documents, in different areas of science and technology, providing potentially or seemingly conflicting definitions. This document does not provide new, authoritative definitions for the terms used herein. Instead, this clause provides short descriptions for the terms used. Where possible, reference is made to existing documents.