

ISO 20814:2019-12 (E)

Nanotechnologies - Testing the phot o catalytic activity of nanoparticles for NADH oxidation

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviated terms	1
3.1	Terms and definitions	1
3.2	Symbols and abbreviated terms	2
4	Description of the test method	3
5	Reagents and apparatus	3
5.1	Reagents	3
5.2	Apparatus	4
6	Measurement procedure	4
6.1	Measurement of NP suspension basic properties	4
6.1.1	UV-Vis absorption spectrum measurement	4
6.1.2	NP suspension stability measurement	5
6.2	UV trans-illuminator light intensity calibration based on 2NB actinometry	5
6.3	Measurement of NADH solution fluorescence intensity	6
6.3.1	NADH photo-oxidation rate measurement at various NP concentrations	6
6.3.2	Calculation of NADH photo-oxidation rate at various NP concentrations	7
7	Test report	8
7.1	Information	8
7.2	Report data format	9
7.2.1	Correction factors C(i,j) obtained by actinometry (see 7.2) with (max, TI)	9
7.2.2	Calibrated slope of NADH fluorescence decrease	9
7.2.3	Plot of kapp versus NP concentration	10
7.2.4	NADH equivalent specific PCA	10
8	Precision	10
8.1	Repeatability	10
8.2	Reproducibility	10
Annex A (normative)	Schematic diagram of 96-well positioning block	11
Annex B (informative)	Sample calibration of UV trans-illuminator light intensity	12
Annex C (informative)	Interlaboratory comparison study of TiO ₂ NP PCA	17
Bibliography		22