ISO/TS 14101:2012-11 (E)

Surface characterization of gold nanoparticles for nanomaterial specific toxicity screening: FT-IR method

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Symbols and abbreviated terms 3

5 Sample preparation mode 3
5.1 Removal of unbound molecules 3
5.2 Dehydration 6
5.3 Screening test for impurities in DW from sample tubes 6

6 FT-IR measurement procedure 7
6.1 General 7
6.2 ATR method 7
6.3 Transmission method 8
6.4 Determination of time required for complete purge 9
6.5 Linear range of IR band intensity versus concentration 10
6.6 LOD and LOQ determination 11
6.7 Repeatability determination 12

7 Application examples 12
7.1 Degrees of ligand exchange 12
7.2 Qualitative measurement of biomolecular binding 13

Annex A (informative) Case study for validation of ligand exchange 15

Annex B (informative) Case study for qualitative measurement of biochemical moieties binding to the AuNP surface 17

Annex C (informative) Selection guide for window materials 20

Bibliography 21