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Guidelines for good practices in zeta-potential measurement

Lignes directrices relatives aux bonnes pratiques pour la mesure du potentiel zéta



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Foreword

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This document was prepared by Technical Committee ISO/TC 24, *Particle characterization including sieving*, Subcommittee SC 4, *Particle characterization*.

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Introduction

Zeta-potential is often used to investigate the isoelectric point (IEP) and surface adsorption for particles in liquid media, and as an indicator in comparing different samples regarding electrostatic-dependent dispersion stability. Zeta-potential is not a directly measurable quantity, but is established using an appropriate theory. Furthermore, zeta-potential is not an intrinsic property of suspended particles; it depends on both particle and medium properties, and how they interact at the interface. Any variation in the liquid chemical and ionic composition affects this interfacial equilibrium and, consequently, zeta-potential. Therefore, sample preparation and measurement procedures can both affect the measurement result. Incorrect conclusions often result from artefacts in sample preparation and issues arising from measurement procedures, or incorrect application of theoretical models for calculating zeta-potential from measurement results.

This document provides general guidelines for sample preparation and measurement procedures for the determination of zeta-potential by optically-based electrophoretic mobility or electroacoustic methods.