First edition
2014-07-01

Colloidal systems — Methods for zeta potential determination —

Part 3: Acoustic methods

Systèmes colloïdaux — Méthodes de détermination du potentiel zêta —

Partie 3: Méthodes acoustiques

Reference number
ISO 13099-3:2014(E)

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Published in Switzerland

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Foreword

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The committee responsible for this document is ISO/TC 24, *Particle characterization including sieving*, Subcommittee SC 4, *Particle characterization*.

ISO 13099 consists of the following parts, under the general title *Colloidal systems — Methods for zeta potential determination*:

— *Part 1: Electroacoustic and electrokinetic phenomena*

— *Part 2: Optical methods*

— *Part 3: Acoustic methods*

Introduction

Zeta potential is a parameter that can be used to predict the long term stability of suspensions and emulsions, and to study surface morphology and surface adsorption of particles and other surfaces in contact with a liquid. Zeta potential is not a directly measurable parameter. It can be determined using appropriate theoretical models from experimentally determined parameters, which depend on electric charge separation at interfaces. “Electrokinetic phenomena” encompass such experimentally observed effects. A group of electrokinetic phenomena at high frequency on MHz scale is referred to as “electroacoustics”.[1] Each classical electrokinetic phenomenon at DC or low AC conditions has electroacoustic analogue. These electroacoustic phenomena have been widely used to determine electrophoretic mobility of various concentrated particulates without sample dilution. The purpose of this part of ISO 13099 in methods for Zeta potential determination is description of general features of such electroacoustic methods that should be common for all instrumental implementation for measuring electrophoretic mobility using electroacoustics and following calculation of zeta potential of particulates.