ISO 21400:2018 (E)

Pulp — Determination of cellulose nanocrystal sulfur and sulfate half-ester content

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Symbols and abbreviated terms

5 Total elemental sulfur content — ICP-OES method

- 5.1 Principle
- 5.2 Reagents and apparatus
- 5.3 Sample purification by dialysis
- 5.4 Microwave-assisted sample digestion and sample preparation
- 5.5 Preparation of calibration solutions and blanks
- 5.6 Analysis of standards and samples by ICP-OES
- 5.7 Calculation of dry CNC total elemental sulfur content and CNC surface charge
- 5.8 Test report

6 Sulfate half-ester content — Conductometric titration method

- 6.1 Principle
- 6.2 Reagents and apparatus
- 6.3 Sample purification by dialysis
- 6.4 Sample protonation by ion exchange
- 6.5 Sample analysis by conductometric titration
- 6.6 Calculation of dry CNC sulfate half-ester content and CNC surface charge
- 6.7 Test report

Annex A (normative) Sample digestion by wet ashing

- A.1 Reagents and apparatus
- A.2 Digestion procedure

Annex B (normative) Sample protonation by batch treatment with ion exchange resin

Annex C (informative) Precision

- C.1 General
- C.2 Repeatability
- C.3 Reproducibility

Page count: 26