ISO 23470:2018 (E)

Soil quality — Determination of effective cation exchange capacity (CEC) and exchangeable cations using a hexamminecobalt(III)chloride solution

Contents

Foreword

Introduction

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Principle
- 5 Reagents
- 6 Apparatus

7 Procedure

- 7.1 Test portion
- 7.2 Exchange reaction
- 7.3 Determination of CEC
- 7.3.1 General
- 7.3.2 Determination of ammonia nitrogen by distillation
- 7.3.2.1 Procedure
- 7.3.2.2 Calculation of the CEC
- 7.3.3 Spectrophotometric determination
- 7.3.3.1 Calibration and measurement
- 7.3.3.2 Calculation of the CEC
- 7.3.4 Spectrometric determination of cobalt
- 7.3.4.1 General
- 7.3.4.2 Experimental conditions
- 7.3.4.3 Calculation of the CEC
- 7.4 Determination of cobalt and exchangeable cations
- 7.4.1 General
- 7.4.2 Standard solutions for exchangeable cations
- 7.4.3 Standard solutions for cobalt
- 7.4.4 Spectrometric determination of exchangeable cations
- 7.4.5 Spectrometric determination of cobalt
- 7.4.6 Calculation of exchangeable cations
- 8 Test report
- 9 Validation
- Annex A (informative) Comparison of different methods for the determination of effective CEC
- Annex B (informative) Results of the interlaboratory comparison for extraction with hexamminecobalt(III)chloride
- Annex C (informative) Results of the interlaboratory comparison for extraction with calcite saturated hexamminecobalt(III)chloride solution
- Annex D (informative) Carbonate and sulfate field model
- Annex E (informative) Effect of minimization of Ca errors by calcite saturation of hexamminecobalt