

DIN EN 16318:2016-07 (E)

Fertilizers and liming materials - Determination of chromium(VI) by photometry (method A) and by ion chromatography with spectrophotometric detection (method B) (includes Amendment :2016)

Contents	Page
European foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions.....	5
4 Sampling and sample preparation.....	5
5 Method A: Determination by water extraction and spectrophotometric detection.....	6
5.1 Principle.....	6
5.2 Reagents.....	6
5.3 Apparatus.....	7
5.4 Procedure.....	7
5.4.1 Preparation of the test solution.....	7
5.4.2 Preparation of the blank test solution.....	8
5.4.3 Spectrophotometric measurement.....	8
5.5 Calculation and expression of the results.....	8
5.5.1 Calibration.....	8
5.5.2 Calculation of the element content in the sample.....	8
6 Method B: Determination by alkaline digestion and ion chromatography with spectrophotometric detection.....	9
6.1 Principle.....	9
6.1.1 Digestion.....	9
6.1.2 Determination.....	9
6.1.3 Interferences and sources of error.....	10
6.2 Reagents.....	10
6.3 Apparatus.....	12
6.4 Alkaline digestion procedure.....	13
6.4.1 General.....	13
6.4.2 Preparation of test solutions using a hotplate or heating block.....	13
6.5 Procedure.....	13
6.5.1 Instrumental set-up.....	13
6.5.2 Calibration.....	13
6.5.3 Test solution measurement.....	14
6.6 Quality control.....	14
6.6.1 General.....	14
6.6.2 Blank test solution.....	14
6.6.3 Verification of method.....	14
6.6.4 Duplicate samples.....	14
6.6.5 Cr(VI) spiked samples.....	15

6.6.6	Cr(III) spiked samples	15
6.6.7	Interpretation of Quality Control data	15
6.7	Calculation and expression of results.....	15
6.7.1	Calculation	15
6.7.2	Expression of results.....	16
7	Ⓐ Precision— Inter-laboratory tests Ⓐ	16
8	Test report.....	16
Annex A (informative) Results of the inter-laboratory test performed by VDLUFA on method A.....		17
A.1	Inter-laboratory tests.....	17
A.2	Statistical results for the determination of chromium(VI) by photometry (method A).....	17
Annex B (informative) Results of a validation study on spiked water samples.....		18
Bibliography		19