

# ISO 14388-3:2014-08 (E)

## Soil quality - Acid-base accounting procedure for acid sulfate soils - Part 3: Suspension peroxy de oxidation combined acidity and sulfur (SPOCAS) methodology

Contents	Page
Foreword .....	iv
Introduction .....	v
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Principle .....	2
4.1 Actual acidity and retained acidity .....	2
4.2 Titratable peroxide acidity, excess acid neutralizing capacity and potential sulfidic acidity .....	2
5 Reagents .....	2
6 Apparatus .....	5
7 Procedure for determination of pH <sub>KCl</sub> and TAA .....	6
7.1 Preparation of the suspension .....	6
7.2 Measurement of pH <sub>KCl</sub> .....	6
7.3 Measurement of TAA .....	7
8 Calculation of TAA .....	8
9 Procedure for determination of sulfur (SKCl), calcium (CaKCl) and magnesium (MgKCl) extractable with 1 mol/l potassium chloride .....	8
10 Calculation of SKCl, CaKCl and MgKCl .....	9
11 Procedure for determination of peroxide pH (pHOX), titratable peroxide acidity (TPA) and excess acid neutralizing capacity (ANCE) .....	9
11.1 Peroxide digestion of sample .....	9
11.2 Measurement of pHOX .....	10
11.3 Carbonate modification (HCl titration to pH 4) .....	11
11.4 Decomposition of excess peroxide .....	11
11.5 Measurement of titratable peroxide acidity (TPA) .....	12
12 Calculation of TPA and ANCE .....	13
12.1 Notation .....	13
12.2 TPA without carbonate modification .....	13
12.3 ANCE (or TPA) with carbonate modification .....	14
13 Procedure for determining peroxide sulfur (SP), calcium (CaP) and magnesium (MgP) .....	14
14 Calculation of peroxide sulfur (SP), calcium (CaP) and magnesium (MgP) .....	15
15 Procedure for determining acid extractable sulfur in soil residue after peroxide oxidation (SRAS) .....	15
15.1 General .....	15

15.2	Rinsing of peroxide digested soil residue, extraction with 4 mol/l hydrochloric acid and determination of extractable sulfur .....	16
16	Calculation of SRAS .....	16
16.1	Calculation of acidity attributed to SRAS (acid-base accounting) .....	16
17	Calculation of TSA .....	17
18	Calculation of SPOS, CaA and MgA .....	17
19	Precision .....	17
20	Test report .....	18
	Bibliography .....	20