

Australian Standard[®]

Analysis of acid sulfate soil—Dried samples— Methods of test

Method 10: Calculation of peroxide oxidizable sulfur (S_{POS}), reacted calcium (Ca_{A}) and reacted magnesium (Mg_{A})

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand for Committee EV-009, Sampling and Analysis of Soil and Biota, Working Group EV-009-02-01, Analysis of Acid Sulfate Soil.

The objective of this Standard is to provide a method to calculate peroxide oxidizable sulfur (S_{POS}), reacted calcium (Ca_{A}) and reacted magnesium (Mg_{A}) in acid sulfate soil using the results obtained from the determination of S_{KCl} , Ca_{KCl} and Mg_{KCl} , and S_{P} , Ca_{P} and Mg_{P} .

METHOD

1 SCOPE

This Standard specifies a method for the calculation of peroxide oxidizable sulfur (S_{POS}), reacted calcium (Ca_{A}) and reacted magnesium (Mg_{A}) in acid sulfate soil (ASS) using the results obtained from the determination of S_{KCl} , Ca_{KCl} and Mg_{KCl} (AS 4969.4), and S_{P} , Ca_{P} and Mg_{P} (AS 4969.5).

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
4969	Analysis of acid sulfate soil—Dried samples—Methods of test
4969.0	Part 0: Introduction and definitions, symbols and acronyms
4969.4	Method 4: Determination of 1 M potassium chloride extractable sulfur (S_{KCl}), calcium (Ca_{KCl}) and magnesium (Mg_{KCl})
4969.5	Method 5: Determination of peroxide sulfur (S_{P}), calcium (Ca_{P}) and magnesium (Mg_{P})

3 DEFINITIONS

For the purpose of this Standard the terms and definitions used in AS 4969.0 apply.

4 PRINCIPLE

Peroxide oxidizable sulfur (S_{POS}) is calculated as the difference between the peroxide sulfur (S_{P}) measured in AS 4969.5 and the KCl extractable sulfur (S_{KCl}) measured in AS 4969.4. Reacted calcium (Ca_{A}) and reacted magnesium (Mg_{A}) are calculated in a similar manner as the difference between the peroxide calcium (Ca_{P}) and magnesium (Mg_{P}) (AS 4969.5) and KCl extractable calcium (Ca_{KCl}) and magnesium (Mg_{KCl}) (AS 4969.4).

5 CALCULATION

Calculate the peroxide oxidizable sulfur (S_{POS}) as %S on an oven-dry soil basis according to the equation below:

$$S_{\text{POS}} = S_{\text{P}} - S_{\text{KCl}}$$

Calculate the reacted calcium (Ca_{A}) and magnesium (Mg_{A}) as %Ca and %Mg on an oven-dry weight basis according to the equations below:

$$Ca_{\text{A}} = Ca_{\text{P}} - Ca_{\text{KCl}}$$

$$Mg_{\text{A}} = Mg_{\text{P}} - Mg_{\text{KCl}}$$

6 TEST REPORT

The test report shall at contain least the following information:

- (a) Sample identification as submitted to the laboratory.
- (b) The results of the S_{POS} , Ca_{A} and Mg_{A} calculations to the nearest 0.01% on an oven-dry weight basis.
- (c) Reference to this Standard, i.e. AS 4969.10.

The test report may also include an estimation of measurement uncertainty.