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Method of Analysis <u>PF 30/82</u>		
Determination of the Content of [REDACTED] [REDACTED] using Potentiometric Titration		
Product: [REDACTED]	Category: [REDACTED]	
<i>Edition: 2</i>	<i>Date: 20 September 2006</i>	
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1. PURPOSE AND APPLICATION

Determination of the content of [REDACTED] ([REDACTED]). The method allows the measurement of [REDACTED] up to a concentration of about 100 meq/Kg. Traces of [REDACTED] that may be present (quantifiable using ion chromatography according to method PF 30/83) are added to the content of [REDACTED]

2. PRINCIPLE

The method consists of titrating the acid in the sample potentiometrically using sodium hydroxide in an environment of water and acetone.

3. EQUIPMENT AND INSTRUMENTS

3.1 Reagents

- 3.1.1 Acetone RPE
- 3.1.2 Demineralised water
- 3.1.3 Standard solution of 0.1 N NaOH

3.2 Instrument

- 3.2.1 Potentiometric titrator equipped with combined glass electrode (Metrohm LL Ecotrode or equivalent)

4. SAMPLES

The samples to analyse are in the form of [REDACTED]. For the handling of these [REDACTED] refer to paragraph 7.

5. METHOD

5.1 Analysis of the sample

In a 100 ml beaker weigh accurately about 0.5 g of sample to a precision of 0.001 g. Using a dispenser add 35 ml of acetone (3.1.1) and 15 ml of demineralized water (3.1.2). Maintaining the sample under magnetic agitation, titrate using the standard solution of 0.1 N NaOH (3.1.3).



5.2 Precision and accuracy (QA/QC)

The statistical elaboration of the data relative to 6 independent tests carried out on a sample is shown below:

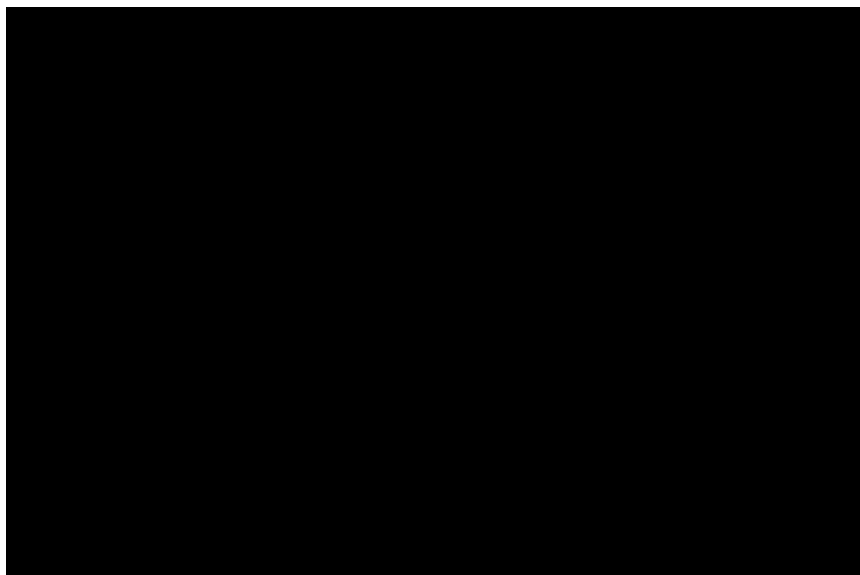


Table 1

where:

ST. DEV. = standard deviation $(\sum(x_{ij}-\text{MEAN})^2/(n-1))^{0.5}$

r = laboratory repeatability (2.8 * s)

(r) = %repeatability, (r / MEDIA)*100

n = number of measurements

precision = $((\max x_i - \min x_i) / 2) / \text{MEAN} * 100$

6. EXPRESSION OF THE RESULTS

The content of , expressed in meq/Kg, is calculated as follows:





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The [REDACTED], expressed in g/eq. Is calculated as follows:

$$\frac{[REDACTED]}{[REDACTED]}$$

where:

$$[REDACTED]$$

P = weight of the sample in grams



7. SAFETY AND PRECAUTIONS

The samples of [REDACTED] [REDACTED] [REDACTED] [REDACTED]. Handle under aspirating fume hood. Handle with caution wearing acid resistant gloves and protective goggles and use all other individual protective devices obligatory in the work area.

Acetone is classified as irritant and highly flammable; use away from an open flame or other heat source.

Refer to the relative safety data sheets for the products used.