



Lime sludge

Dry matter content

1 Scope and field of application

This SCAN-test Method specifies a method for the determination of the dry matter content of lime sludge. The Method is applicable to samples of lime sludge obtained in a pulp mill using the sulphate process.

The sampling procedure is not covered by this Method.

2 Definition

2.1 *Dry matter content (of lime sludge)*: The ratio of the mass of a sample of lime sludge after drying at a temperature of $105 \text{ }^{\circ}\text{C} \pm 3 \text{ }^{\circ}\text{C}$ to its mass at the time of sampling.

Note – The dry matter content is normally expressed as a percentage.

3 Principle

The sample is dried at $105 \text{ }^{\circ}\text{C}$ for 60 min in an open dish.

4 Apparatus

4.1 *Weighing dishes*, of aluminium or other metal foil, approximately 60 mm in diameter and 20 mm deep, weighing not more than 2 g. The dishes may not change their mass by more than 1 mg when heated at $105 \text{ }^{\circ}\text{C}$ for 1 h.

4.2 *Drying oven*, controlled at a temperature of $105 \text{ }^{\circ}\text{C} \pm 3 \text{ }^{\circ}\text{C}$. The oven shall be provided with means for air circulation.

5 Preparation of sample

Immediately after sampling, transfer the sample to a water-vapour tight vessel, such as a glass or plastic jar with a tightly fitting lid.

Keep the sample in a cool place until required. The period from sampling to analysis should be kept to a minimum.

Before taking portions for analysis, make sure that the sample is thoroughly mixed.

Note – The procedure for mixing the sample before analysis should be selected taking into account the type of lime sludge. Some sludges of rather low dry matter content are preferably placed in polyethene bags, which are then sealed and placed in jars. Before being opened, the bags should be kneaded thoroughly to ensure that the sample is homogeneous.

Sludges of high dry matter content may be difficult to mix. Stirring with a sturdy rod of stainless steel or similar material is usually efficient, but the risk of a loss of moisture must be borne in mind.

6 Procedure

Weigh an aluminium dish to the nearest 1 mg. Note the weight as *c* grams. With a spoon, take a sample of between 5 and 10 g and place it in the

aluminium dish. Weigh it again to the nearest 1 mg without delay. Note the weight as a grams. Place the dish in the drying oven and dry it at $105\text{ °C} \pm 3\text{ °C}$ for not less than 60 min.

Place the dish in a desiccator and allow it to cool to room temperature. Weigh the dish and its contents to the nearest 1 mg and note the weight as b grams.

7 Calculation

Calculate the dry matter content from the expression

$$X = \frac{100 \cdot (b - c)}{(a - c)}$$

where

- X is the dry matter content as a percentage;
- a is the weight, in grams, of dish and sample before drying;
- b is the weight, in grams, of dish and sample after drying;
- c is the weight, in grams, of the empty dish.

8 Report

Report the dry matter content to the nearest 0,1 per cent. If parallel determinations have been carried out, report each result separately.

The test report should include a reference to this Method and the following particulars:

- a) date and place of testing;
- b) identification of the lime sludge tested;
- c) the results;
- d) any departure from this Method or any other circumstances that may have affected the results.