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Sodium hydrogen carbonate for industrial use — Determination of moisture content — Gravimetric method

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2200 was drawn up by Technical Committee ISO/TC 47, *Chemistry.*

It was approved in May 1971 by the Member Bodies of the following countries:

Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Chile	Netherlands	Switzerland
Egypt, Arab Rep. of	New Zealand	Turkey
France	Poland	United Kingdom
Germany	Portugal	U.S.A.
Hungary	Romania	U.S.S.R.

The Member Body of the following country expressed disapproval of the document on technical grounds:

India

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SODIUM HYDROGEN CARBONATE FOR INDUSTRIAL USE — DETERMINATION OF MOISTURE CONTENT — GRAVIMETRIC METHOD

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a gravimetric method for the determination of moisture content of sodium hydrogen carbonate for industrial use. The method is applicable to products having a moisture content greater than 0.1 % (m/m).

2 REFERENCE

ISO 2199, *Sodium hydrogen carbonate for industrial use — Determination of sodium hydrogen carbonate — Titrimetric method.* (At present at the stage of Draft.)

3 PRINCIPLE

Heating the test portion, distributed in a thin layer, at 250 °C to constant mass. The moisture content is obtained by the loss of mass, less the quantities of water and of carbon dioxide, corresponding to the decomposition of sodium hydrogen carbonate into sodium carbonate, according to the reaction

$$2NaHCO_3 \rightarrow Na_2CO_3 + H_2O + CO_2$$

4 APPARATUS

Ordinary laboratory apparatus and

4.1 Weighing bottle, 100 ml capacity and about 75 mm in diameter, with ground glass lid.

4.2 Electric drying oven, capable of reaching a temperature of at least 250 °C and capable of being controlled so as not to exceed a temperature of 270 °C.

5 PROCEDURE

5.1 Test portion

Weigh, to the nearest 0.1 mg, 5 ± 0.1 g of the test sample.

5.2 Determination

Spread the test portion (5.1) in a thin layer in the weighing bottle (4.1) previously tared after remaining for 30 min in the drying oven (4.2) controlled at 250 °C, followed by cooling to room temperature in a desiccator.

Place the weighing bottle with test portion in the drying oven (4.2), at an initial temperature not greater than 100 °C, and with the ground glass lid of the weighing bottle (4.1) placed aslant. Then heat progressively to a minimum of 250 °C, maintaining this temperature for 3 h without exceeding 270 °C. Take out the weighing bottle, place it in a desiccator to cool, and when it has cooled to room temperature, close it and weigh again.

6 EXPRESSION OF RESULTS

The moisture content is given, as a percentage by mass, by the formula :

$$(m_1 - m_2) \times \frac{100}{m_0} - 0.369\,2A$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of the weighing bottle containing the test portion before heating;

m_2 is the mass, in grams, of the weighing bottle containing the test portion after heating;

A is the sodium hydrogen carbonate content, expressed as percentage by mass, of the sample, determined as described in ISO 2199;

0.369 2 is the loss of mass, in grams, undergone in the course of heating by 1 g of sodium hydrogen carbonate.

Express the result to one decimal place.

7 TEST REPORT

The test report shall include the following particulars:

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual features noted during the determination;

d) any operation not included in this International Standard or regarded as optional.