International Standard 1269

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Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of volatile matter (including water)

Plastiques — Résines d'homopolymères et de copolymères de chlorure de vinyle — Détermination des matières volatiles (y compris l'eau)

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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 1269 was developed by Technical Committee ISO/TC 61, *Plastics*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 1269-1975), which had been approved by the member bodies of the following countries :

Austria
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Netherlands
New Zealand
Poland
Romania
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Spain
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USA
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The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Australia
Switzerland

Printed in Switzerland

Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of volatile matter (including water)

1 Scope and field of application

This International Standard specifies a method of determining the volatile matter (including water) in homopolymer and copolymer resins of vinyl chloride.

2 Principle

Heating at 110 ± 2 °C, to constant mass, of a test portion of resin spread out in a weighing dish of specified dimensions.

3 Apparatus

3.1 Oven, capable of being controlled at 110 ± 2 °C, with slight natural draught.

3.2 Weighing dish, shallow, about 80 mm in diameter and 30 mm in height, of glass, aluminium or, preferably, stainless steel, with lid.

3.3 Balance, accurate to 0,000 1 g.

3.4 Desiccator, containing a suitable desiccant.

4 Procedure

Weigh the dish (3.2) with its lid to the nearest 0,000 5 g, after heating it in the oven (3.1) controlled at 110 ± 2 °C for 1 h and cooling it to room temperature in the desiccator (3.4).

Spread evenly over the bottom of the dish a mass m_0 (about 5 g) of resin, replace the lid and weigh to the nearest 0,000 5 g.

Place the assembly in the oven (3.1) at 110 ± 2 °C, remove the cover, leave it in the oven and close the oven door.

After 1 h remove the assembly from the oven, allow to cool in the desiccator and weigh to the nearest 0,000 5 g. Heat for further half-hour periods until constant mass is obtained i.e. until the difference between the results of two successive weighings does not exceed 0,000 5 g (the lid must be kept on during transfer and weighing). From this calculate the mass m_1 of the residue.

Carry out two determinations.

Calculate the values of the percentage of volatile matter from the formula given in clause 5.

If these two percentages differ by less than 0,10 % in absolute value, use them for the calculation.

If not, carry out further determinations until two values satisfying this requirement are obtained.

However, if the two values obtained are each less than 0,30 % — no matter what the difference between them — new determinations are not necessary.

NOTE — In certain special cases it may be necessary to conduct the test at the lower temperature of 105 ± 2 °C. In reporting the results give the reasons for choosing 105 °C.

5 Expression of results

For each of the determinations, calculate the percentage of volatile matter (including water) to two decimal places from the formula

$$\frac{m_0 - m_1}{m_0} \times 100$$

where

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

m_1 is the mass, in grams, of the test portion after heating.

Calculate the mean, to two decimal places (to the nearest 0,05), of the two values finally retained.

In the test report, give this mean as the value of the percentage of volatile matter (including water).

NOTES

1 For ordinary use, for example the designation of a resin, the expression of the result to one decimal place only is generally sufficient.

2 Co-operative tests have shown reproducibility between different laboratories, on the values thus determined, of ± 0,10 %.