International Standard 124

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Rubber latices — Determination of total solids content

Latex de caoutchouc — Détermination des matières solides totales

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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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 124 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

ISO 124 was first published in 1974. This second edition cancels and replaces the first edition, of which it constitutes a minor revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Rubber latices — Determination of total solids content

1 Scope and field of application

This International Standard specifies a method for the determination of the total solids content of natural rubber latex concentrate which contains preservative agents and which has been prepared by some type of concentration process, and also for the determination of the total solids content of synthetic rubber latices.

The method is not necessarily suitable for latices from natural sources other than *Hevea brasiliensis* or for compounded latex, vulcanized latex or artificial dispersions of rubber.

2 Reference

ISO 123, *Rubber latex — Sampling*.

3 Principle

A test portion is heated to constant mass in an oven under specified conditions, either at atmospheric pressure or under vacuum, depending on the type of latex. The total solids content is determined by weighing before and after heating.

4 Apparatus

Ordinary laboratory apparatus and

4.1 Flat-bottomed dishes, lipless, of diameter approximately 60 mm, provided with covers.

4.2 Oven, capable of being maintained at 70 ± 2 °C or 100 ± 2 °C.

4.3 Vacuum oven, capable of being maintained at 125 ± 2 °C.

5 Sampling

Carry out the sampling in accordance with one of the methods specified in ISO 123.

6 Procedure

For a natural rubber latex concentrate, proceed according to 6.1 and for a synthetic rubber latex proceed according to either 6.1 or 6.2.

6.1 Heating at atmospheric pressure

Weigh, to the nearest 1 mg, a dish (4.1), together with its cover. Pour into the dish 2,0 ± 0,5 g of latex, replace the cover and weigh to the nearest 1 mg. Gently swirl the contents of the dish to ensure that the latex covers the bottom. If desired, approximately 1 cm^3 of distilled water or water of equivalent purity may be added and mixed well with the latex by swirling.

Place the dish, uncovered, in the oven (4.2) so that it is horizontal and heat it at either 70 ± 2 °C or 100 ± 2 °C until the sample has lost its whiteness, or for 16 h or 2 h respectively. Allow to cool in a desiccator, replace the cover and weigh. Return the dish, uncovered, to the oven for 30 min if the drying temperature is 70 ± 2 °C, or for 15 min if the drying temperature is 100 ± 2 °C. Allow to cool in the desiccator, replace the cover and reweigh. Repeat the drying procedure at intervals of 30 or 15 min, as appropriate, until the loss in mass between two successive weighings is less than 1 mg.

6.2 Heating at reduced pressure

Weigh, to the nearest 0,1 mg, a dish (4.1), together with its cover. Pour into the dish 1,0 ± 0,2 g of latex, replace the cover and weigh to the nearest 0,1 mg. Remove the cover, add 1 cm^3 of distilled water or water of equivalent purity and mix well by swirling to ensure that the latex covers the bottom of the dish.

Place the dish, uncovered, in the vacuum oven (4.3) so that it is horizontal. Reduce the pressure slowly, to avoid foaming and splattering, and heat at 125 ± 2 °C for 45 to 60 min at a pressure below 20 kPa*. Allow to cool in a desiccator, replace the cover and weigh. Repeat the drying procedure at intervals of 15 min until the loss in mass between two successive weighings is less than 0,5 mg.

7 Expression of results

Calculate the total solids content (TSC), expressed as a percentage by mass, using the formula

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

where

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

m_1 is the mass, in grams, of the dried material.

The results of duplicate determinations shall not differ by more than 0,2 % (m/m).

8 Test report

The test report shall include the following particulars:

a) reference to this International Standard;

b) identification of the test sample;

c) the results, and the form in which they are expressed;

d) any unusual features noted during the determination;

e) any operation not included in this International Standard or in the International Standard to which reference is made, or regarded as optional.

* 1 kPa = 1 kN/m^2