INTERNATIONAL STANDARD 1598

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Plastics — Cellulose acetate — Determination of insoluble particles

Matières plastiques — Acétate de cellulose — Détermination des particules insolubles

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 61 has reviewed ISO Recommendation R 1598 and found it technically suitable for transformation. International Standard ISO 1598 therefore replaces ISO Recommendation R 1598-1970 to which it is technically identical.

ISO Recommendation R 1598 was approved by the Member Bodies of the following countries :

Austria	India	Portugal
Belgium	Iran	Romania
Brazil	Israel	South Africa, Rep. of
Czechoslovakia	Italy	Spain
Egypt, Arab Rep. of	Japan	Sweden
France	Korea, Rep. of	Switzerland
Germany	Netherlands	United Kingdom
Hungary	Poland	U.S.A.

No Member Body expressed disapproval of the Recommendation.

The Member Body of the following country disapproved the transformation of ISO/R 1598 into an International Standard :

Canada

Printed in Switzerland

Plastics — Cellulose acetate — Determination of insoluble particles

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the number of visible particles (including all kinds of contamination and black dirt) in cellulose acetate which are insoluble in a mixture of dimethylphthalate, dichloromethane, and methanol, and are of size 0,15 mm or larger.

This method is intended for cellulose acetate having an acetic acid yield above 50 % and containing no additives which affect the test results.

2 REFERENCE

ISO/R 585, *Plastics — Determination of the moisture content of non-plasticized cellulose acetate.*

3 PRINCIPLE

A solution is prepared by addition of a solvent to the cellulose acetate, and the visible, undissolved particles in this solution of a size equal to or larger than a standard reference particle of specified size are counted.

4 REAGENTS

4.1 Dichloromethane, with relative density at 20 °C/20 °C of 1,321 to 1,331. Not less than 95 % (*V/V*) shall distil at 1 013 mbar (760 mmHg) between 39 and 40,5 °C.

4.2 Methanol, with relative density at 20 °C/20 °C of 0,792 to 0,795 and distillation range at 1 013 mbar (760 mmHg) of 64,5 to 65,5 °C.

4.3 Dimethylphthalate, having a moisture content less than 0,1 % (*m/m*).

All reagents must be free from insoluble particles.

5 APPARATUS

5.1 Transparent glass dish, with flat bottom having an area of not less than 26 000 mm^2.

Fine lines are ruled on the underside to form a network of squares with 25 mm sides. The dish is provided with a transparent cover to exclude dust.

5.2 Illuminated viewing stand, comprising:

a) a sheet of white opal glass the size of the dish or larger, evenly illuminated from below;

b) means to support the dish about 80 mm above the opal glass.

5.3 Standard reference particle

This particle is an opaque circular spot with sharply defined edge on a transparent background. The spot has a diameter of 0,15 ± 0,005 mm. It is mounted on a holder so that the spot can be held underneath the dish and close to any particle seen in the cellulose acetate solution.

6 TEST SAMPLE

Determine the moisture content of the sample according to ISO/R 585.

7 PROCEDURE

7.1 Prepare a mixture of 90 parts of dichloromethane (4.1) and 10 parts of methanol (4.2), by volume.

Add this mixture to dimethylphthalate (4.3) in the proportion of 3 parts to 1 part by volume. The resulting mixture must be free from visible particles.

7.2 Weigh, with a precision of ± 0,5 g, the quantity of the test sample corresponding to 20 g of dry cellulose acetate, and spread it evenly in the dish (5.1).

7.3 Add to the dish 180 ± 0,5 g of the solvent mixture.

7.4 Place the cover on the dish and allow to stand at room temperature until solution is completed.

7.5 Place the covered dish in the illuminated viewing stand (5.2) and examine the network, square by square, holding the reference standard (5.3) as close as possible to any particle seen; if the apparent projected area of the particle is equal to that of the standard or greater, the particle shall be included in the count.

7.6 The count shall include visible particles of all types, irrespective of colour or degree of opacity.