INTERNATIONAL STANDARD

ISO 498

Second edition
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Natural rubber latex concentrate — Preparation of dry films

Latex concentré de caoutchouc naturel — Préparation de pellicules sèches

Reference number
ISO 498:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 498 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Sub-Committee SC 3, *Raw materials (including latex) for use in the rubber industry*.

This second edition cancels and replaces the first edition (ISO 498:1974), of which it constitutes a minor technical revision.

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Natural rubber latex concentrate — Preparation of dry films

1 Scope

This International Standard specifies a method for preparing dry, homogeneous films, substantially free of air bubbles, from natural rubber latex concentrate.

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

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 123:1985, *Rubber latex — Sampling*.

ISO 124:1992, *Rubber latices — Determination of total solids content*.

3 Apparatus

3.1 **Suitable mould**, in which the film can be cast, prepared by cementing strips of glass or a rigid plastic material 6 mm wide and 1,5 mm thick on a flat piece of glass plate. The cavity so formed shall be of an adequate size to provide suitable specimens for testing, e.g. with sides of 100 mm to 150 mm.

NOTE 1 As a result of the effect of surface tension, areas of the film around the edges may be thicker than at the centre.

Adhesives suitable for affixing the strips to the glass are epoxide resin adhesives, and poly(vinyl acetate) dissolved in methyl ethyl ketone. Such a mould will give dry films about 1 mm thick when filled with latex of 62 % (*m*/*m*) total solids content.

3.2 **Square-mesh gauze**, of polyamide or stainless steel, with an average aperture width of 180 µm ± 10 µm, for straining the latex.

3.3 **Straightedge**, wooden, plastic or stainless steel, with which to scrape the surface of the latex in the mould free of air bubbles.

3.4 **Cabinet** or **covered space**, clean, dry and dust-free, with a level surface on which to place the mould.

3.5 **Oven**, capable of maintaining a temperature of 35 °C ± 2 °C.

3.6 **Cellulosic-film sheets**, thin, clear and transparent, to cover and protect the dry film.

3.7 **Desiccator** or **airtight container**, for storing the dry film.

3.8 **Beaker**, of suitable capacity, e.g. 50 cm^3.

4 Sampling

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

5 Procedure

Determine the total solids content of the latex in accordance with ISO 124. If the total solids content is less than or equal to 62 % (*m*/*m*), prepare the film without dilution of the latex. If the total solids content is greater than 62 % (*m*/*m*), add distilled water to bring it to 61,5 % (*m*/*m*) solids content.

Mix the latex sample gently to ensure homogeneity and allow to stand for 5 min. Strain 35 cm^3 to

40 cm^3 carefully through the gauze (3.2) into the beaker (3.8). Allow to stand for 5 min in the beaker. During this period, keep the beaker covered in order to minimize surface drying. Remove any bubbles from the surface of the latex in the beaker with a piece of filter paper.

Place the mould in the position in which the film will be left to dry (see 3.4). Then pour the latex into the mould in a continuous stream while moving the beaker to and fro over the surface and close to the plate to avoid the formation of air bubbles. Pour a slight excess of latex over that required to fill the mould completely. Allow the latex in the mould to stand for 1 min, then scrape off the excess with the clean straightedge (3.3) by moving it evenly across the mould at a speed of up to 25 mm/s once only.

Allow the cast film to dry in a normal, dust-free atmosphere for not less than 16 h (i.e. overnight). After drying at room temperature, continue to dry the film in the oven (3.5) at a temperature of 35 °C ± 2 °C. When sufficiently dry to handle, strip the film from the mould, taking care to handle the surface of the film as little as possible. Turn the film over and place it flat on a piece of thin, clear, transparent cellulosic sheet (3.6). Allow to stand for at least another 24 h at a temperature of 35 °C ± 2 °C and, when dry, cover the remaining side of the film with a similar cellulosic sheet.

In some cases, the dryness of the film can be judged by its clarity. Clarity of the film generally increases as it becomes dry. If it is not possible to judge the dryness visually, dry the film to constant mass at a temperature of 35 °C ± 2 °C in a dry atmosphere.

Store the dry film in the desiccator or airtight container (3.7) to prevent absorption of moisture, and keep in a cool place in the dark until required.

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