
Lepila za papir in karton za embalažo in za higienske proizvode za enkratno uporabo - Ugotavljanje nastajanja pene pri vodnih vrstah lepil

Adhesives for paper and board, packaging and disposable sanitary products - Determination of foam formation for aqueous adhesives

Klebstoffe für Papier, Verpackung und Hygieneprodukte - Bestimmung der Schaumbildung von wäßrigen Klebstoffen

Adhésifs pour papier et carton, emballage et produits sanitaires jetables - Détermination de la formation de mousse des adhésifs aqueux

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Ta slovenski standard je istoveten z: EN 12704:1999

ICS:

55.040	Materiali in pripomočki za pakiranje	Packaging materials and accessories
83.180	Lepila	Adhesives

SIST EN 12704:2000**en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12704

November 1999

ICS 83.180

English version

Adhesives for paper and board, packaging and disposable
sanitary products - Determination of foam formation for aqueous
adhesives

Adhésifs pour papier et carton, emballage et produits
sanitaires jetables - Détermination de la formation de
mousse des adhésifs aqueux

Klebstoffe für Papier, Verpackung und Hygieneprodukte -
Bestimmung der Schaumbildung von wäßrigen Klebstoffen

This European Standard was approved by CEN on 30 September 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 193 "Adhesives", the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2000, and conflicting national standards shall be withdrawn at the latest by May 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard specifies a test method to determine the foam formation, or air entrainment during rapid stirring of aqueous adhesives with a maximum viscosity of 10 000 mPa·s at room temperature determined in accordance with prEN 12092 :1996.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 923, *Adhesives — Terms and definitions*

EN 1066, *Adhesives — Sampling*

EN 1067, *Adhesives — Examination and preparation of samples for testing*

prEN 12092 :1996, *Adhesives — Determination of viscosity*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

SIST EN 12704:2000

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 923 apply.

4 Principle

The adhesive is stirred under defined conditions and the foam formation determined from the differences between the initial and final volumes of the adhesive.

5 Safety

Persons using this standard shall be familiar with normal laboratory practice.

This standard does not purport to address all the safety problems, if any, associated with its use.

It is the responsibility of the user to establish health and safety practices and to ensure compliance with any European or national regulatory conditions.

6 Apparatus

6.1 **Stirrer motor**, capable of driving the stirrer at an adjustable rotary speed up to $3\,000\text{ min}^{-1}$.

6.2 **Stirrer**, with dimensions as shown in figure 1.

6.3 **Beaker**, 2 l, of transparent material of approximately dimensions, $h = 230\text{ mm}$, $d = 105\text{ mm}$.

6.4 **Balance**, accuracy 1,0 g.

6.5 **Mechanical system**, to secure the stirrer and beaker.

6.6 **Timer**, accuracy 1 s.

6.7 **Ruler**, accuracy 1 mm.

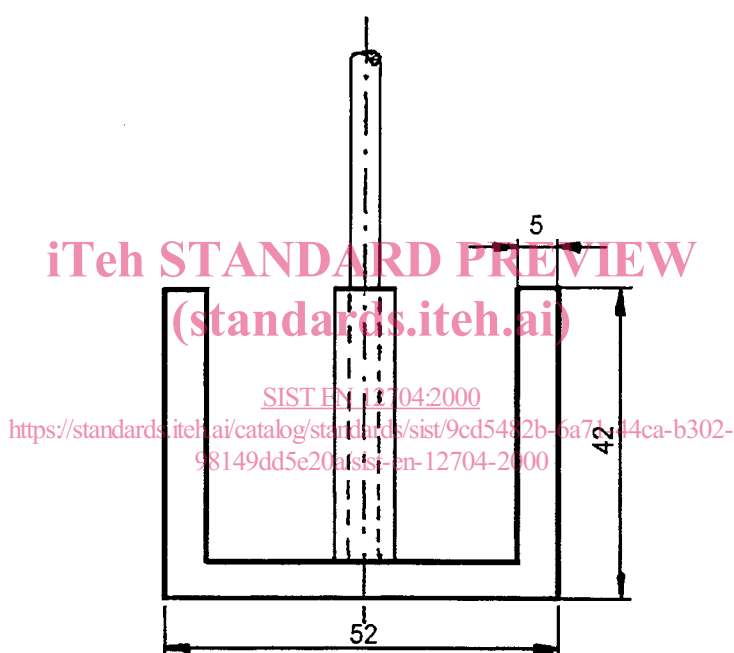


Figure 1 — Stirrer

7 Procedure

7.1 Take the sample in accordance with EN 1066 and prepare the sample in accordance with EN 1067.

Weigh (400 ± 10) g directly into the clean beaker (6.3).

7.2 Condition the sample at temperature of $(23 \pm 2)^\circ\text{C}$ and $(50 \pm 5)\%$ relative humidity in accordance with ISO 554.

7.3 Position the stirrer (6.2) in the beaker so that it is approximately 1 mm from the bottom and the shaft of the stirrer is in the centre of the beaker, $(\pm 1,00\text{ mm})$.

7.4 Measure the initial height h_i (in millimetres) of the adhesive in the beaker.

7.5 Begin stirring slowly and increase to $2\,500\text{ min}^{-1}$ over 10 s.

7.6 Start the timer (6.6) and continue stirring for 5 min.

7.7 Stop stirring and immediately measure the final height h_f (in millimetres) of the adhesive in the beaker.

7.8 Measure the height of the adhesive also after 1 min and 5 min.

NOTE These measurements are an indication of foam stability.

7.9 Carry out a minimum of 3 tests.

8 Expression of results

Calculate the foam formation, as a percentage, calculated from the difference in height of the adhesive before and after stirring, using the following equation:

$$f \% = \frac{h_f - h_i}{h_i} \times 100$$

where

h_f final height of adhesive after stirring in millimetres.

h_i initial height of adhesive before stirring in millimetres.

Express the foam formation as the arithmetic mean of the results of the three tests carried out immediately after stirring, after 1 min and after 5 min.

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9 Test report

Test report shall include:

- A reference to this European Standard;
- identification of the adhesive, giving all information for the sample;
- description of the adhesive (i.e. chemical type, pH, viscosity);
- number of tests carried out;
- foam formation (see clause 7);
- date of test.