DRAFT PROPOSAL ON A GENERAL METHOD FOR THE SUPPLEMENTARY INFORMATION SECTION OF THE FOURTH EDITION OF

THE INTERNATIONAL PHARMACOPOEIA

SOFTENING TIME DETERMINATION OF LIPOPHILIC SUPPOSITORIES

(July 2012)

Draft for comment

This document was provided by a quality control expert. Should you have any comments thereon, please send these to Dr S. Kopp, Manager, Medicines Quality Assurance Programme, Quality Assurance and Safety: Medicines, World Health Organization, 1211 Geneva 27, Switzerland; fax: (+41 22) 791 4730 or e-mail: kopps@who.int (with a copy to gaspardm@who.int) by 5 October 2012.

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*THE INTERNATIONAL PHARMACOPOEIA*

**SOFTENING TIME DETERMINATION OF LIPOPHILIC SUPPOSITORIES**

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SOFTENING TIME DETERMINATION OF LIPOPHILIC SUPPOSITORY

[Note from the Secretariat: at its meeting in October 2007 the Expert Committee on Specifications on Pharmaceutical Preparations recommended that a general method text on the determination of softening time of lipophilic suppositories be included in the Supplementary Information section of The International Pharmacopoeia.

The present proposal is based on the text in the European Pharmacopoeia, from which a formal authorization to reproduce its text in Ph.Int. is currently being sought as part of the collaboration with the Council of Europe.]

SOFTENING TIME DETERMINATION OF LIPOPHILIC SUPPOSITORY

This test is intended to determine, under defined conditions, the time which elapses until a suppository maintained in water softens to the extent that it no longer offers resistance when a defined weight is applied.

METHOD A

Apparatus
The apparatus (see Figure 1) consists of a glass tube 15.5 mm in internal diameter with a flat bottom and a length of about 140 mm. The tube is closed by a removable plastic cover having an opening 5.2 mm in diameter. The apparatus comprises a rod 5.0 mm in diameter which becomes wider towards the lower end, reaching a diameter of 12 mm. A metal needle 2 mm in length and 1 mm in diameter is fixed on the flat underside.

The rod consists of 2 parts, a lower part made of plastic material and an upper part made of plastic material or metal with a weight disk. The upper and lower parts are either fitted together (manual version) or separate (automated version). The weight of the entire rod is 30 ± 0.4 g. The upper part of the rod carries a sliding mark ring. When the rod is introduced into the glass tube so that it touches the bottom, the mark ring is adjusted to coincide with the upper level of the plastic cover.

Procedure
Place the glass tube containing 10 ml of water in a water-bath and equilibrate at 36.5 ± 0.5 °C. Fix the glass tube vertically and immerse to a depth of at least 7 cm below the surface but without
touching the bottom of the water-bath. Introduce a suppository, tip first, into the tube followed by the rod with the free gliding plastic cover into the glass tube until the metal needle touches the flat end of the suppository. Put the cover on the tube (beginning of time measurement). Note the time which elapses until the rod sinks down to the bottom of the glass tube and the mark ring reaches the upper level of the plastic cover.

Figure 1. Method A - Apparatus for measuring the softening time of lipophilic suppositories
Dimensions in millimetres

METHOD B

Apparatus

The apparatus (see Figure 2) consists of a water-bath (B) into which an inner tube (A) is inserted and fixed with a stopper. The inner tube is closed by a stopper at the bottom. The apparatus is fitted with a thermometer. Two insets are available:

- a glass rod (C1) in the form of a tube sealed at both ends, carrying a rim at its lower end weighed with lead shot, which has a weight of 30 ± 0.4 g;
- a penetration inset (C2) consisting of a rod (7.5 ± 0.1 g) in a tube which has an enlargement for the suppository, both made of stainless steel.

**Procedure**

Pour 5 ml of water at 36.5 ± 0.5 °C into the inner tube (A), introduce a suppository with the tip downwards and onto that, place the inset (C1 or C2). Note the time which elapses between this moment and the moment when the lower, rimmed end of the glass rod (C1) or the steel rod (C2) reaches the narrowed part of the inner glass tube. Melting or dissolution is then considered as complete.

![Diagram of the apparatus](image)

**Figure 2. Method B - Apparatus for measuring the softening time of lipophilic suppositories**

Dimensions in millimetres

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