Edition: BP 2025 (Ph. Eur. 11.6 update)

Flexible Collodion

General Notices

Action and use

Skin protective.

DEFINITION

Flexible Collodion is a solution of Colophony in a mixture of Virgin Castor Oil and Collodion.

Extemporaneous preparation

The following formula and directions apply.

Colophony	25 g
Virgin Castor Oil	25 g
Collodion	Sufficient to produce 1000 mL

Mix the ingredients and stir until the colophony has dissolved; allow any deposit to settle and decant the clear liquid.

Flexible collodion complies with the requirements stated under Liquids for Cutaneous Application and with the following requirements.

IDENTIFICATION

A. Expose a thin layer to the air. A thin, tenacious film is left which, when ignited, burns rapidly with a yellow flame.
B. Mix with an equal volume of *water*. A white, viscid, stringy mass is obtained.

Ethanol content

20 to 23% when determined by the following method.

Carry out the method for *gas chromatography*, Appendix III B using the following solutions in *ether*.

(1) 5% v/v of *absolute ethanol* and 5% v/v of *acetonitrile* (internal standard).
(2) 20% v/v of the substance being examined.
(3) 20% v/v of the substance being examined and 5% v/v of the internal standard.

CHROMATOGRAPHIC CONDITIONS

(a) Use a glass column (1.5 m × 4 mm) packed with porous polymer beads (100 to 120 mesh) (Porapak Q is suitable).
(b) Use *nitrogen* as the carrier gas at 40 mL per minute.
(c) Use isothermal conditions maintained at 120°.
(d) Use a flame ionisation detector.
(e) Inject 1 µL of each solution.

DETERMINATION OF CONTENT

Calculate the content of C_2H_6O from the areas of the peaks due to ethanol and *acetonitrile* in the chromatograms obtained with solution (1) and solution (3).

For preparations in which industrial methylated spirit has been used, determine the content of ethanol as described above.

Determine the concentration of methanol in the following manner. Carry out the chromatographic procedure described above but using the following solutions.

(1) 0.25% v/v of *methanol* and 0.25% v/v of *acetonitrile* (internal standard).
(2) Dilute a volume of the preparation being examined with *ether* to contain between 0.2% and 0.3% v/v of *methanol*.
(3) Prepare in the same manner as solution (2) but adding sufficient of the internal standard to produce a final concentration of 0.25% v/v.

LIMITS

The sum of the contents of ethanol and methanol is 20 to 23% v/v and the ratio of the content of methanol to that of ethanol is commensurate with industrial methylated spirit having been used.

COLLODION FOR THE PREPARATION OF FLEXIBLE COLLODION

DEFINITION

Collodion is a solution of Pyroxylin in a mixture of Ether and Ethanol (90 per cent).

PRODUCTION

It may be prepared by adding 100 g of pyroxylin to 900 mL of a mixture of 3 volumes of solvent ether and 1 volume of ethanol (90 per cent) and agitating continuously until dissolved. The viscosity of the resulting solution is determined and the solution is diluted with the solvent mixture until it complies with the requirement for kinematic viscosity.

In making Collodion the ethanol (90 per cent) may be replaced by industrial methylated spirit diluted so as to be of equivalent alcoholic strength, provided that the law and the statutory regulations governing the use of industrial methylated spirit are observed.

CHARACTERISTICS

A clear, viscid, colourless or pale straw-coloured liquid.

TESTS

Weight per mL

0.785 to 0.795 g, Appendix V G.

Kinematic viscosity

405 to 700 $mm^2 s^{-1}$, when determined using a falling sphere viscometer complying with British Standard 188: 1977 (Methods for the determination of viscosity of liquids). Fill the fall tube with the collodion to about 10 mm above the 220 mm mark, place vertically in the bath and allow to stand for air bubbles to clear and for temperature equilibrium to be attained. Clean the sphere, immerse it in a portion of the liquid being examined maintained at a temperature of 19.9° to 20.1° and when it is at this temperature introduce it, without wiping, into the delivery tube. Observe the time for the lowest part of the sphere to pass through the planes of the tops of the 175-mm mark and the 25-mm mark, using a telescope or other suitable device to avoid errors due to parallax. The average of three readings concordant to within 0.5% is taken as the time of fall. Calculate the kinematic viscosity (v) in square millimetres per second ($mm^2 s^{-1}$) from the expression:

$$\nu = \frac{d^2 g(\delta - \rho)}{0.18 v \rho} \times 0.867$$

where	d	=	the diameter of the sphere in cm,
	δ	=	density of the sphere in g cm^{-3},
	ρ	=	density of the collodion being examined in g cm^{-3},
	v	=	velocity of the fall in cm s^{-1},
	g	=	local acceleration due to gravity in cm s^{-2}.

When Collodion is prescribed or demanded, Flexible Collodion shall be dispensed or supplied.