

**CELANDINE
FOR HOMOEOPATHIC PREPARATIONS**

**CHELIDONIUM MAJUS
FOR HOMOEOPATHIC PREPARATIONS**

Chelidonium majus ad praeparationes homoeopathicas
Other Latin name used in homoeopathy: Chelidonium

DEFINITION

Whole fresh, flowering plant of *Chelidonium majus* L.

CHARACTERS

Macroscopic and microscopic characters described under identification tests A and B.

Noxious odour.

IDENTIFICATION

- A. Celandine is a perennial plant exuding yellow latex. It has an erect, pubescent stem which grows up to around 80 cm. The roots are reddish-brown and exude reddish latex. The yellow flowers are arranged in pseudo-umbels with peduncles of different lengths. The corolla consists of 2 yellowish sepals and 4 yellow petals evenly rolled within the bud. The stamens are numerous. The superior ovary contains 2 carpels and is crowned with a short style.
- B. Take a sample of epidermis from the underside of the leaf. Examine under a microscope, using *chloral hydrate solution R*. The abaxial epidermis consists of cells with lobed contours, anomocytic stomata (2.8.3) and a single row of multi cellular covering trichomes with a rounded distal cell. The length of the trichomes is extremely variable, sometimes exceeding 500 μ m.

TESTS

Foreign matter (2.8.2): maximum 5 per cent.

Loss on drying (2.2.32): minimum 70.0 per cent, determined on 5.0 g of finely cut drug, by drying in an oven at 100-105 °C for 2h.

STOCK

DEFINITION

Celandine mother tincture complies with the general technique for the preparation of mother tinctures (see *Homœopathic Preparations (1038)* and French Pharmacopoeia Authority Supplement). The mother tincture is prepared with ethanol (45 per cent V/V), using the whole fresh flowering plant of *Chelidonium majus* L.

Content, adjusted value: minimum 0.015 per cent *m/m* and maximum 0.050 per cent *m/m* of total

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

alkaloids, expressed as chelidonine ($C_{20}H_{19}NO_5$; M_r 353.4).

CHARACTERS Brownish liquid. **IDENTIFICATION**

Thin-layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 10 mg of *berberine hydrochloride R* and 10 mg of *chelidonine R* in 20 ml of *ethanol (96 per cent V/V) R*.

Plate: TLC silica gel plate R.

Mobile phase: glacial acetic acid R, water R, butanol R (10:10:40 V/V/V). *Application:* 20 ml, as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection A: examine in ultraviolet light at 365 nm.

Results A: see below the sequence of fluorescent zones present in the chromatograms of the reference solution and the test solution. Furthermore other fluorescent zones may be present in the chromatogram obtained with the test solution.

Top of the plate	
Berberine hydrochloride: a green-yellow zone	A red zone A red-brown zone A blue zone A green-yellow zone (berberine) A intense yellow zone A green-yellow zone A blue zone
Reference solution	Test solution

Detection B: first spray the plate with *potassium iodobismuthate solution R*, then with *0.05 M sulphuric acid*. Examine in daylight.

Results B: see below the sequence of zones present in the chromatograms of the reference solution and the test solution. Furthermore other orange zones may be present in the chromatogram of the test solution.

Top of the plate	
Chelidonine: an orange zone Berberine hydrochloride: an orange zone	An orange zone An orange zone (chelidonine) An orange zone (berberine) An orange zone
Reference solution	Test solution

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

TESTS

Ethanol (2.9.10): 40 per cent V/V to 50 per cent V/V.

Methanol and 2-propanol (2.9.11): maximum 0.05 per cent V/V; maximum 0.05 per cent V/V.

Dry residue: minimum 1.5 per cent *m/m* (see French Pharmacopoeia Authority Supplement).

ASSAY

In an evaporating dish, accurately weigh 20.00 g of mother tincture. Evaporate the ethanol. Add 10 ml of *dilute sulphuric acid R*. Heat on a water-bath for 20 min. Readjust the mass of remaining liquid to 20.0 g with *water R*. Filter. Place 15.0 g of filtrate in a separating funnel. Render the solution alkaline with *concentrated sodium hydroxide solution R*. Extract with at least 3 quantities, each of 20 ml, of *ether R*. Dry the combined ether solutions over *anhydrous sodium sulphate R*. Filter and concentrate the filtrate to a few millilitres. Add 20.0 ml of *0.005 M sulphuric acid*. Evaporate the remaining ether off. Add 10 ml of *water R* and titrate the excess of acid with *0.01 M sodium hydroxide*, using *methyl red mixed solution R* as indicator.

1 ml of *0.005 M sulphuric acid* is equivalent to 3.534 mg of total alkaloids, expressed as chelidonine.