

**POISON HEMLOCK  
FOR HOMOEOPATHIC PREPARATIONS  
CONIUM MACULATUM  
FOR HOMOEOPATHIC PREPARATIONS**

**Conium maculatum ad praeparationes homoeopathicas**  
Other Latin name used in homoeopathy: **Conium**

**DEFINITION**

Fresh, flowering, aerial parts of *Conium maculatum* L., harvested at the end of the blooming season.

**CHARACTERS**

Macroscopic and microscopic characters described under identification.

**IDENTIFICATION**

Umbels composed of white flowers. Three short, lanceolate, acuminate, membranous on the edges and deflexed bracts form the involucre. Involucre composed of short acuminate bracts, linked at the base and attached on the same side. Flower peduncles with red spots. Flowers with 5 very short, green sepals, 5 white, obovate petals with a curved tip and 5 stamens. Inferior, concrete ovary with 2 loculi, each one presenting a single anatropous, pendant ovum tipped by 2 divergent styles expanded at the base in a stylopodium. Ovoid fruit, 3 mm long, 2 mm in diameter, with compressed commissure surfaces and bulging abaxial (dorsal) surfaces, always topped by the persistent remaining of the calyx and by 2 compressed conic stylopodia. The greenish mericarp is crossed by 5 yellowish-white, prominent, crenate, wavy, midribs.

**TESTS**

**Foreign matter** (2.8.2): maximum 5 per cent.

**Loss on drying** (2.2.32): minimum 60.0 per cent, determined on 5.0 g of finely-cut drug, by drying in an oven at 100-105 °C for 2 h.

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**2007.**

## STOCK

### DEFINITION

Poison hemlock mother tincture complies with the requirements of the general technique for the preparation of mother tinctures (see *Homoeopathic Preparations (1038)* and French Pharmacopoeia Authority Supplement). The mother tincture is prepared with ethanol (65 per cent *V/V*), using fresh, flowering, aerial parts of *Conium maculatum* L. harvested at the end of the blooming season.

*Adjusted content*: minimum 0.020 per cent *m/m* and maximum 0.070 per cent *m/m* of total alkaloids, expressed as coniine ( $C_8H_{17}N$ ;  $M_r$  127.2).

### CHARACTERS

Greenish-brown liquid.

Noxious odour.

### IDENTIFICATION

Thin layer chromatography (2.2.27).

*Test solution*. Mother tincture.

*Reference solution*. Dissolve 20 mg of *coniine R* and 20 mg of *senecionine R* in 10 ml of *methanol R*.

*Plate*: *TLC silica gel plate R*.

*Mobile phase*: *glacial acetic acid R*, *water R*, *butanol R* (10:10:40 *V/V/V*).

*Application*: 40  $\mu$ l, as bands.

*Development*: over a path of 10 cm.

*Drying*: in air.

*Detection*: spray with *potassium iodobismuthate solution R*. Examine in daylight.

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

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Top of the plate	
----- Coniine : an orange zone Senecionine : an orange zone -----	----- An orange zone -----
<b>Reference solution</b>	<b>Test solution</b>

## TESTS

**Ethanol content (2.9.10)**: 60 per cent *V/V* to 70 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 (2.8.16)**: minimum 1.3 per cent *m/m*.

## ASSAY

In a 250 ml round-bottomed flask with a ground glass neck, place 25.00 g of mother tincture, add 0.2 ml of *hydrochloric acid R*. Shake the solution and evaporate the ethanol on a water-bath under reduced pressure. Drip about 0.5 ml of *concentrated sodium hydroxide solution R* to obtain pH 12. Dilute to 15 ml with *water R*. Transfer the entire solution into a column for chromatography, 150 mm long and 30 mm in diameter, containing 15 g of *kieselguhr for chromatography R*. Allow to stand for 30 min, then elute the column with 50 ml of *ether R*. Transfer the entire eluate in a separating funnel and wash with 2 quantities each of 25 ml of *sodium chloride solution R*. Place the organic phase into a 100 ml round-bottomed flask with 6.0 ml of *hydrochloric acid 0.05 M*. Evaporate the ether on a water-bath under reduced pressure, then add 0.1 ml of *methyl red mixed solution R*. Titrate the mixture with *sodium hydroxide 0.05 M* until a green colour appears.

Calculate the percentage content *m/m* of total alkaloids, expressed as coniine, from the expression :

$$\frac{(n_b - n) \times 0.636}{m}$$

$n$  = volume of added *sodium hydroxide 0.05 M* for the test, in milliliters,

$n_b$  = volume of added *sodium hydroxide 0.05 M* for the blank, in milliliters,

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$m$  = mass of the mother tincture sample, in grams.

1 ml of *hydrochloric acid 0.05 M* corresponds to 6.36 mg of total alkaloids, expressed as coniine.