

Citrus Unshiu Peel

Aurantii Bobilis Pericarpium

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Citrus Unshiu Peel is the pericarp of the ripe fruit of *Citrus unshiu* Markovich or *Citrus reticulata* Blanco (*Rutaceae*).

Description Irregular pieces of pericarp, about 2 mm in thickness; externally yellow-red to dark yellow-brown, with numerous small dents associated with oil sacs; internally white to light grayish yellow-brown; light and brittle in texture. Odor, characteristic aroma; taste, bitter and slightly pungent.

Identification To 0.5 g of pulverized Citrus Unshiu Peel add 10 mL of methanol, warm on a water bath for 2 minutes, and filter. To 5 mL of the filtrate add 0.1 g of magnesium in ribbon-form and 1 mL of hydrochloric acid, and allow to stand: a red-purple color develops.

Loss on drying Not more than 13.0% (6 hours).

Total ash Not more than 4.0%.

Extract content Dilute ethanol-soluble extract: not less than 30.0%.

Essential oil content Perform the test with 50.0 g of pulverized Citrus Unshiu Peel as directed in Essential oil content under the Crude Drugs, provided that 1 mL of silicon resin is previously added to the sample in the flask: the volume of essential oil is not less than 0.2 mL.

Clove

Caryophylli Flos

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Clove is the flowering bud of *Syzygium aromaticum* Merrill et Perry (*Eugenia caryophyllata* Thunberg) (*Myrtaceae*).

Description Dark brown to dark red buds, 1–1.8 cm in length, consisting of slightly compressed and four-sided receptacle, crowned by 4 thick sepals and 4 nearly spherical, membranous, imbricated petals, enclosing numerous stamens and a single style. Odor, strong and characteristic; taste, pungent, followed by a slight numbness of the tongue.

Identification Mix 0.1 mL of the mixture of essential oil and xylene, obtained in the Essential oil content, with 2 mL of ethanol (95), and add 1 to 2 drops of iron (III) chloride TS: a green to blue color develops.

Purity (1) Stem—The amount of the stem contained in Clove does not exceed 5.0%.

(2) Foreign matter—The amount of foreign matter other than the stem contained in Clove does not exceed 1.0%.

Total ash Not more than 7.0%.

Acid-insoluble ash Not more than 0.5%.

Essential oil content Perform the test with 10.0 g of Clove as directed in the Essential oil content under the Crude Drugs: the volume of essential oil is not less than 1.6 mL.

Powdered Clove

Caryophylli Flos Pulveratus

チヨウジ末

Powdered Clove is the powder of Clove.

Description Powdered Clove occurs as a dark brown powder. It has a strong, characteristic odor and a pungent taste, followed by slight numbness of the tongue.

Under a microscope, Powdered Clove reveals epidermal tissue with stomata, collenchyma, parenchyma with oil sacs, and spongy parenchyma or its fragments; furthermore, a few fusiform thick-walled fibers, spiral vessels 6–10 μm in diameter, anther and pollen grains, and rosette aggregates of calcium oxalate 10–15 μm in diameter. Epidermis of anther shows characteristically reticulated walls; pollen grains tetrahedral 10–20 μm in diameter; rosette aggregates of calcium oxalate arranged in crystal cell rows, or contained in collenchyma cells and parenchyma cells.

Identification Mix 0.1 mL of a mixture of essential oil and xylene, obtained in the Essential oil content, with 2 mL of ethanol (95), and add 1 to 2 drops of iron (III) chloride TS: a green to blue color develops.

Purity Foreign matter—Under a microscope, Powdered Clove does not contain stone cells or starch grains.

Total ash Not more than 7.0%.

Acid-insoluble ash Not more than 0.5%.

Essential oil content Perform the test with 10.0 g of Powdered Clove as directed in the Essential oil content under the Crude Drugs: the volume of essential oil is not less than 1.3 mL.

Containers and storage Containers—Tight containers.

Clove Oil

Oleum Caryophylli

チヨウジ油

Clove Oil is the volatile oil distilled with steam from the flower buds or leaves of *Syzygium aromaticum* Merrill et Perry (*Eugenia caryophyllata* Thunberg) (*Myrtaceae*).

It contains not less than 80.0 vol% of total eugenol.

Description Clove Oil is a colorless or light yellow-brown, clear liquid. It has a characteristic aroma and a burning taste.

It is miscible with ethanol (95) and with diethyl ether.