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Cardamom Seed

DEFINITION

Cardamom Seed is the dried ripe seed of *Elettaria cardamomum* (L.) Maton var. *cardamomum* (Fam. Zingiberaceae).
[NOTE—Cardamom Seed should be recently removed from the capsule.]

CONTAMINANTS

- ARTICLES OF BOTANICAL ORIGIN (561), Pesticide Residue Analysis: Meets the requirements

SPECIFIC TESTS

BOTANICAL CHARACTERISTICS

Macroscopic

Unground Cardamom Seed: Seeds usually appear in agglutinated groups of 2–7 seeds and as separate seeds surrounded by an adhering membranous aril. The individual seeds are oblong-ovoid or irregularly three- to four-sided, 3–4 mm in length. They are convex on the dorsal side, strongly longitudinally grooved on the ventral side, coarsely tuberculated, and externally pale orange to dark brown. The odor is aromatic. The taste is aromatic, pungent, and slightly bitter.

Powdered Cardamom Seed: Brown to weak yellow to light olive green

Microscopic

Unground Cardamom Seed: Sections show a loosely attached membranous aril; a brownish seed coat consisting of an epidermal layer of thick-walled cells, a pigment layer of small cells with red to orange contents, a layer of volatile oil cells with suberized walls and a single layer of radially elongated, strongly lignified stone cells with inner walls heavily thickened, and a minute lumen containing silica; and a large, colorless perisperm surrounding a central, orange to yellow endosperm in which a small, straight embryo is embedded.

Powdered Cardamom Seed: It consists chiefly of fragments of perisperm, endosperm, embryo, and seed coat. The endosperm and perisperm cells are filled with starch grains 1–4 µm in diameter, or may contain one or more prisms of calcium oxalate 10–25 µm in diameter. The seed coat is characterized by its red- to orange-colored cells, is polygonal in surface view, and is about 20 µm in diameter. Fragments of pericarp tissue with spiral vessels and with accompanying slightly lignified fibers are relatively few.

- ARTICLES OF BOTANICAL ORIGIN (561), Methods of Analysis, Acid-Insoluble Ash: NMT 4.0%

ADDITIONAL REQUIREMENTS

- PACKAGING AND STORAGE: Preserve against attack by insects.
- LABELING: The label states the Latin binomial and the official name.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
CARDAMOM SEED	Nam-Cheol Kim Scientific Liaison	BDSHM2020 Botanical Dietary Supplements and Herbal Medicines

Chromatographic Database Information: [Chromatographic Database](#)

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