

Title (en)

Process and apparatus for drying biopolymer capsules, in particular soft gelatin capsules

Title (de)

Verfahren und Vorrichtung zum Trocknen von Kapseln aus einem Biopolymer, insbesondere Weichgelatinekapseln

Title (fr)

Procédé et dispositif de séchage de capsules biopolymères, notamment capsules de gélatine molle

Publication

EP 0935111 A1 19990811 (DE)

Application

EP 98810085 A 19980205

Priority

EP 98810085 A 19980205

Abstract (en)

To dry capsules of a biopolymer, and especially a soft gelatin, the capsules are within a rotating hollow body with a gas drying medium. The capsules are carried by a mechanical conveyor system in at least one drying tube, which rotates round its longitudinal axis, to travel between the entry and exit ends of the tube. The drying medium flows with or against the direction of capsule travel through the tube. The capsules are carried through a number of drying tubes, linked together in series. The drying medium recirculates through the tubes in a closed system. An Independent claim is included for an apparatus with a rotating drying tube to carry the capsules along its inner wall from the entry (2) to the exit (3) ends. The drying medium (4) flows through the tube, along its longitudinal axis. Preferred Features: A conveyor screw (5) carries the capsules through the rotating drying tube. The rotating tube (1a) and the conveyor screw (5) are of a plastics material, with the screw welded to the inner wall of the tube. The tube mantle has at least one opening which can be closed. The drying tube lies on a number of rollers (8), where at least one is powered by a drive. The drying medium is fed in and extracted at the drying tube through a coaxial tube connection (9) at both ends. The end of the drying tube, with at least one tube connection (9), is closed by a lid (11) with a preferably circular arc segment opening at its periphery. The tube connection has a rigid diaphragm, on a parallel plane to the lid (11), which clears the peripheral opening. On a rotation of the drying tube, the diaphragm frees the opening for a capsule to be inserted and removed from the drying tube. A number of rotating drying tubes (1a) are held on a frame at different levels. The outlet end of a tube is linked to the inlet end of the drying tube underneath it. The drying tube has a length of ≥ 2 m and an inner diameter of ≥ 0.3 m, with a closed mantle. The screw conveyor (5) forms a continuous spiral screw blade through the tube, with an inner diameter which is larger than the outer diameter of the end tube connections.

Abstract (de)

Die zu trocknenden Kapseln werden in einem um seine Längsachse rotierenden Trocknungsrohr (1a) von einer Einlassseite zu einer Auslassseite gefördert. Als Fördermittel dient dabei vorzugsweise eine am Rohrrinnenmantel angeordnete Förderschnecke (5). Das gasförmige Trocknungsmittel (4) wird im Gleichstrom oder im Gegenstrom zur Förderrichtung der Kapseln in Längsrichtung durch das Trocknungsrohr geführt. Gegenüber dem bekannten geschlossenen Trocknungstumbler ermöglicht dieses Verfahren einen kontinuierlichen Kapseldurchlauf und eine schonende Kapselbehandlung. <IMAGE>

IPC 1-7

F26B 11/04

IPC 8 full level

F26B 11/04 (2006.01)

CPC (source: EP)

F26B 11/0436 (2013.01); **F26B 11/0481** (2013.01)

Citation (applicant)

US 5200191 A 19930406 - STEELE DON [US], et al

Citation (search report)

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Designated contracting state (EPC)

CH DE ES GB IT LI

DOCDB simple family (publication)

EP 0935111 A1 19990811; **EP 0935111 B1 20030521**; DE 59808446 D1 20030626

DOCDB simple family (application)

EP 98810085 A 19980205; DE 59808446 T 19980205