

82 Drying, kilns, coffee roasters, centrifuges for general use

82a Drying processes and apparatus not covered special classes, kilns, coffee roasters**82b Centrifugal machines especially for paste and liquids, for dehydrating or cleaning or for separating according to specific weights**

82a Drying processes and apparatus not covered special classes (drying of textiles 8b, 8d; combined grinding and drying 50e-17/10), kilns (malt kilns 6a), coffee roasters

- 82a-1/01 Drying processes
- 82a-1/02 Pneumatic drying and conveying
- 82a-1/03 Methods and devices for using exhaust gases, e.g. heat recovery
- 82a-2 Chamber driers (hop kilns 6a-6, 6a-7, 6a-11)
- 82a-3 Tunnel driers
- 82a-4 Drying houses
- 82a-5 Drying cabinets (34I-11; 42i-12; 42I-13)
- 82a-6 Driers for hollow articles (for foundry moulds and cores 31a)
- 82a-7 Driers with louvered bottoms
- 82a-8 Driers with endless conveyor belts
- 82a-9 Drying furnaces for space drying
- 82a-10 Stationary drying frames
- 82a-11 Rotating drying frames
- 82a-12/01 Stationary tray driers
- 82a-12/02 Agitators for tray driers
- 82a-13 Rotating tray driers
- 82a-14 Trough driers with rotating mechanism
- 82a-15 Trough driers without rotating mechanism
- 82a-16/01 Chute driers in general
- 82a-16/02 Centrifugal driers (8d-6; 82b)
- Chute driers
- 82a-17/01 with fixed built-in fittings
- 82a-17/02 with tiltable guiding surfaces
- 82a-17/03 with rollers and paddle wheels
- 82a-17/04 with endless conveyors
- Multi-level driers
- 82a-18/01 in general
- 82a-18/02 with vertically movable frames, baskets etc.
- 82a-18/03 with troughs
- 82a-18/04 with drums
- Drum driers
- 82a-19/01 in general
- 82a-19/02 with disintegrating devices
- 82a-19/03 with hollow axle
- 82a-19/04 Collecting and discharging devices
- 82a-19/05 Charging devices
- 82a-19/06 Agitators

82a-19/07	Bearings
82a-20	with scrolls or worms
82a-21/01	with built-in trickler devices
82a-21/02	with built-in cells
82a-21/03	with lifting shovels
	Rotary driers
82a-22/01	in general
82a-22/02	Charging devices
82a-22/03	Scraping devices
	Tubular driers
82a-23/01	in general
82a-23/02	Charging devices
82a-23/03	Discharging devices
82a-24	Electro-osmotic driers (10c-6)
82a-25/01	Miscellaneous driers
82a-25/02	Driers for pasta
82a-25/03	Shaking racks and heated conveyors
82a-25/04	Driers for sheets and plates
82a-25/05	Sand driers
82a-25/06	Wood driers
82a-25/07	Lacquer drying ovens
82a-25/08	Vacuum driers
82a-26	Auxiliary equipment for dryers: agitators, shovels, charging and discharging devices, drying carts, anti-dust devices, etc.
82a-27	Evaporators for drying plants
82a-28/01	Air heaters for drying plants
82a-28/02	Apparatus for production of heating and drying gases
82a-29	Horizontal rotary coffee roasters
82a-30	Coffee roasters in general
82a-31	Auxiliary equipment for coffee roasters
	Drying processes
82a-1/01	Drying and kiln processes
82a-1/02	Pneumatic drying and conveying
82a-1/03	Suspension-drying through atomising
82a-1/04	Gravity drying
82a-1/05	Vacuum drying
82a-1/06	Drying in conditioned gases
82a-1/07	Pressure and/or steam-drying (drying of steam 12e-2/50)
82a-1/08	Drying in immersion baths
82a-1/20	Electric drying, in general (21h-35; 21h-36)
82a-1/21	High-frequency induction drying
82a-1/22	High-frequency capacitive drying
82a-1/30	Drying by means of mechanically produced vibration, e.g. ultrasonic waves
82a-1/40	Radiation drying
82a-1/50	Waste heat and vapour recovery
	Driers with fixed bases and stationary material
82a-2	Chamber dryers
82a-4	Fixed drying frames and houses (as buildings 37f-7/01; for flax after retting see 29a-4; for field crops 45e-29/06, 45e-29/08)
82a-5	Drying cabinets (for laboratory use 42i-12/01)

82a-7 Trough driers without rotating mechanism

82a-8 Multi-level driers

Driers with fixed bases and moving material

82a-9/01 Trough driers with rotating mechanism

82a-9/10 Multiple-rack driers with agitator

82a-10 Shaft driers with fixed built-in fittings, open surface drier

82a-12/01 Fixed tray driers

82a-12/02 Agitators for tray driers

Driers with moving supports

82a-13 Rotating tray driers

82a-14 Rotating drying frames

82a-15 Rotating rack driers

82a-16 Shaking racks

82a-17 Louvered-bottom driers (hop kilns 6a-6, 6a-7, 6a-11)

82a-18 Tunnel driers and driers with endless conveyor belts

Drum driers

82a-19/01 General

82a-19/03 Multiple drums

82a-19/04 Collecting and delivery devices

82a-19/05 Charging devices

82a-19/06 Agitators

Auxiliary devices for drum driers

82a-20 Drum driers with scrolls, worms, and the like

82a-21/01 Drum driers with built-in trickler devices

82a-21/02 Drum driers with built-in cells

Rotary driers

82a-22/01 General

82a-22/02 Charging devices

82a-22/03 Scraping devices

82a-22/10 Auxiliary equipment for rotary driers

Tubular driers

82a-23/01 General

82a-23/02 Charging devices

82a-23/03 Delivery devices

Driers in which the material to be dried is freely exposed in the drying medium

82a-25/01 Gravity feed drier

82a-25/10 Suspension [pneumatic] driers

Miscellaneous driers

82a-30/01 Drying furnaces for space drying

82a-30/10 Drying equipment for pasta

82a-30/20 Drying equipment for sheets and plates, plywood (leather 28b-17; paper, cardboard 55d-28 – 55d-31)

82a-30/30 Wood driers

82a-30/40 Lacquer drying ovens

82a-30/50 Coffee roasters, in general

82a-30/51 Horizontal rotary coffee roasters

82a-30/52 Auxiliary equipment for coffee roasters

- 82a-30/60 Sand driers and driers for hollow articles (for casting moulds and cores 31a-4, 31a-5)
- 82a-31 Vacuum driers
- 82a-32 Pressurised driers
- 82a-33 Electric driers, in general
- 82a-34 Radiation driers
- 82a-35 Devices for drying by means of mechanical vibrations, e.g. ultrasonic oscillations
- 82a-39 Miscellaneous driers

Auxiliary equipment for dryers

- 82a-40/01 General
- 82a-40/10 Conveying devices for the drying agents
- 82a-40/20 Regulating, connecting and safety devices
- 82a-40/30 Charging and discharging devices, excluding those classified in special groups
- 82a-40/40 Evaporators for drying equipment
- 82a-40/50 Air heaters for drying plants
- 82a-40/60 Apparatus for production of heating and drying gases

- 82b Centrifugal machines [centrifuges] especially for paste and liquids, for dehydrating or cleaning or for separating according to specific weights** (for special purposes 1a-18; 8a-5; 8a-19; 8b-9; 8d-6; 10c-7; 13d-26; 21e; 21d; 29a-6; 31c-18; 32a-24/04; 32a-19/04; 42k-32; 42l-6/01; 45e-18; 47h-20; 47h-26; 55d-2; 55d-31/10; 72b-6; 77f-24; 78c-6; 80a-56; 89k-2)

Centrifugal machines

- 82b-1 Centrifuges for discontinuous operation, also mould centrifuges (80a-56; processes for moulding and pressing sugar 89d-8, 89d-9)
- 82b-2 Horizontal centrifuges for continuous operation
- Vertical centrifugal machines for continuous operation
- 82b-3/01 with sieve drums, general (laundry centrifuges 8d-6; concentrating centrifugal devices for ore and coal slurry 1a-18)
- 82b-3/02 Special structures of sieve drum casing
- 82b-3/03 Devices on sieve drums for washing or purging the material handled (processes for purging sugar in centrifuges 89d-5)
- 82b-3/10 with imperforate drums
- 82b-3/20 with drum discharge openings located in the plane of maximum diameter
- 82b-3/30 Trap chambers for imperforate drums
- 82b-3/40 Structure of centrifuge housing and frame
- 82b-3/50 Centrifugal machines with fully enclosed housing
- 82b-4 Centrifugal machines with bottom discharge, especially by means of movable bottom covers
- 82b-5 Centrifugal machines with top discharge
- Discharge devices
- 82b-6/01 Knives or tubes adjustable with respect to the drum wall
- 82b-6/02 Discharge knives or the like rotating about the drum axis
- 82b-6/03 Discharge knives, disks or blades, rotating non-coaxially with the drum axis
- 82b-6/04 Discharge worms
- 82b-6/10 Axially movable drums or sliding rings
- 82b-6/20 Miscellaneous discharge devices
- 82b-7 Filter centrifugal machines
- 82b-8 Sieve centrifugal machines with several successive axial trap chambers
- 82b-9 Special centrifugal machines

Components and accessories of centrifugal machines

- 82b-10/01 Bearings for centrifugal machines, general
- 82b-10/10 Bearings for drum shafts, general
- 82b-10/11 Hanger bearings
- 82b-10/12 Journal bearings
- 82b-10/13 Step bearings
- 82b-10/14 Drum shaft structures
- 82b-10/20 Drum mounting
- 82b-10/30 Housing mounting
- 82b-10/40 Lubricating devices for centrifugal machines
- 82b-11/01 Drives for centrifugal machines, general (special mounting of electric motors driving centrifugal machines 21d1-47; devices for starting and regulating electrical motors 21c-57 – 21c-62; 47h-20)
- 82b-11/10 Drives for suspended centrifugal machines
- 82b-11/20 Drives for vertical centrifugal machines
- 82b-11/30 Drives for horizontal machines
- 82b-11/40 Special types of drive, e.g. friction pulley drives or jet-type drives
- 82b-11/50 With clutches built in centrifuge
- 82b-12 Disengaging devices, brakes
- 82b-13 Speed control and speed indicators, when modifying the centrifuge structure
- 82b-14 Devices on centrifugal machines for control of equilibrium (counterbalancing 42k-32; oscillation damping 47h-26)
- 82b-15 Devices on drums for feeding and discharging the material handled and control devices therefor, also in connection with the control of other processes in the centrifugal machines; structure of feeding containers, e.g. milk containers
- 82b-16 Heating, cooling, foam prevention, ventilation of centrifugal machines
- 82b-17 Drum inserts [insert plates], agitators, etc.
- 82b-18 Drums or drum linings of special material, drum reinforcement, sieve beds, etc.
- 82b-19 Components and accessories of special type and devices for cleaning of drums
- 82b-20 Safety devices