

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