

ECLA**EUROPEAN CLASSIFICATION****B29B****PREPARATION OR PRETREATMENT OF THE MATERIAL TO BE SHAPED; MAKING GRANULES OR PREFORMS; RECOVERY OF PLASTICS OR OTHER CONSTITUENTS OF WASTE MATERIAL CONTAINING PLASTICS****B29B7/00**

Mixing; Kneading ([N: for preparation of dough [A21C1/00](#)]; in general [B01F](#); combined with calendering [B29C43/24](#), with injection [B29C45/46](#), with extrusion [B29C47/36](#))

B29B7/00B

. [N: Methods (chemical aspects [C08J3/00](#))] [C9511]

B29B7/00B4

. . [N: for mixing in batches] [N0105]

B29B7/00B5

. . [N: for continuous mixing] [N0105]

B29B7/02

. non-continuous, with mechanical mixing or kneading devices, i.e. batch type

B29B7/04

. . with non-movable mixing or kneading devices

B29B7/06

. . with movable mixing or kneading devices

B29B7/08

. . . shaking, oscillating or vibrating

B29B7/08B

. . . . [N: by means of axially movable pistons]

B29B7/10

. . . rotary

B29B7/10C

. . . . [N: with rollers or the like in casings]

B29B7/10D

. . . . [N: using rotary casings]

B29B7/12

. . . . with single shaft

B29B7/12B

. [N: having a casing closely surrounding the rotor, e.g. for masticating rubber (with more than one shaft [B29B7/18B](#)); Rotors therefor ([B29B7/14](#), [B29B7/16](#) take precedence)]

B29B7/14

. with screw or helix

B29B7/16

. with paddles or arms

B29B7/18

. with more than one shaft

B29B7/18B

. [N: having a casing closely surrounding the rotors, e.g. of Banbury type (with single shaft [B29B7/12B](#))]

B29B7/18B2

. [N: Rotors therefor]

B29B7/20

. with intermeshing devices, e.g. screws

B29B7/22

. . Component parts, details or accessories; Auxiliary operations

B29B7/24

. . . for feeding

B29B7/24B

. . . . [N: in measured doses]

B29B7/24B2

. [N: of several materials]

B29B7/24C

. . . . [N: in mixers having more than one rotor and a casing closely surrounding the rotors, e.g. with feeding plungers]

B29B7/24D

. . . . [N: with plungers for introducing the material, e.g. from below ([B29B7/24C](#) takes precedence)]

B29B7/26

. . . for discharging, e.g. doors

B29B7/26B

. . . . [N: from the underside in mixers having more than one rotor and a casing closely surrounding the rotors]

B29B7/26B2	. . . . .	[N: using sliding doors] [N9511]
B29B7/28	. . .	for measuring, controlling or regulating, e.g. viscosity control [N: (B29B7/24B takes precedence)]
B29B7/28B	. . . . .	[N: measuring data of the driving system, e.g. torque, speed, power]
B29B7/28C	. . . . .	[N: measuring properties of the mixture, e.g. temperature, density (B29B7/28B takes precedence)]
B29B7/30	. . . . .	continuous, with mechanical mixing or kneading devices
B29B7/32	. . . . .	with non-movable mixing or kneading devices
B29B7/32B	. . . . .	[N: Static mixers (in general B01F5/06B)]
B29B7/34	. . . . .	with movable mixing or kneading devices
B29B7/36	. . . . .	shaking, oscillating or vibrating
B29B7/36B	. . . . .	[N: by means of axially movable pistons]
B29B7/38	. . . . .	rotary (B29B7/52 takes precedence)
B29B7/38B	. . . . .	[N: fluid mixers]
B29B7/40	. . . . .	with single shaft
B29B7/40B	. . . . .	[N: having a casing closely surrounding the rotor, e.g. with a plunger for feeding the material (B29B7/40F2 , B29B7/42 take precedence)] [C9511]
B29B7/40C	. . . . .	[N: using a rotor-stator system with intermeshing elements, e.g. teeth (B29B7/40F3 , B29B7/40D take precedence)]
B29B7/40D	. . . . .	[N: with feeding or valve actuating means, e.g. with cleaning means]
B29B7/40F	. . . . .	[N: Mixing heads (B29B7/40D , B29B7/42 take precedence; mixing heads without moving stirrer B29B7/74G)]
B29B7/40F2	. . . . .	[N: with a casing closely surrounding the rotor, e.g. with conical rotor] [C9511]
B29B7/40F3	. . . . .	[N: with mixing elements on a rotor co-operating with mixing elements, perpendicular to the axis of the rotor, fixed on a stator]
B29B7/42	. . . . .	with screw or helix
B29B7/42C	. . . . .	[N: with screw and additionally other mixing elements on the same shaft, e.g. paddles, discs, bearings, rotor blades of the Banbury type]
B29B7/42D	. . . . .	[N: with screw sections co-operating, e.g. intermeshing, with elements on the wall of the surrounding casing]
B29B7/42D2	. . . . .	{7 dots} [N: and oscillating axially (in general B01F11/00F1)]
B29B7/42F	. . . . .	[N: with conical screw surrounded by conical casing]
B29B7/42G	. . . . .	[N: with screw surrounded by a casing provided with grooves or cavities]
B29B7/42H	. . . . .	[N: with consecutive casings or screws, e.g. for charging, discharging, mixing]
B29B7/42J	. . . . .	[N: with independently driven screws rotating about the same axis, e.g. oscillating axially; with axially oscillating screws (B29B7/42D2 takes precedence)]
B29B7/42K	. . . . .	[N: Parts or accessories, e.g. casings, feeding or discharging means]
B29B7/42K2	. . . . .	{7 dots} [N: Screws(B29B7/42C takes precedence)]
B29B7/44	. . . . .	with paddles or arms
B29B7/46	. . . . .	with more than one shaft
B29B7/46B	. . . . .	[N: each shaft comprising rotor parts of the Banbury type in addition to screw parts]

B29B7/48	. . . . .	with intermeshing devices, e.g. screws
B29B7/48B	. . . . .	[N: provided with paddles, gears or discs (B29B7/48C takes precedence)]
B29B7/48C	. . . . .	[N: provided with screw parts in addition to other mixing parts, e.g. paddles, gears, discs]
B29B7/48C2	. . . . .	{7 dots} [N: the other mixing parts being discs perpendicular to the screw axis] [N9511]
B29B7/48D	. . . . .	[N: with two shafts provided with screws, e.g. one screw being shorter than the other (B29B7/48C takes precedence)]
B29B7/48F	. . . . .	[N: with three or more shafts provided with screws]
B29B7/48G	. . . . .	[N: with screws surrounded by a casing provided with grooves or cavities]
B29B7/48H	. . . . .	[N: with consecutive casings or screws, e.g. for feeding, discharging, mixing]
B29B7/48K	. . . . .	[N: Parts, e.g. casings, sealings; Accessories, e.g. flow controlling or throttling devices (discharging B29B7/58B ; feeding B29B7/60)]
B29B7/48K2	. . . . .	{7 dots} [N: Screws (B29B7/48C takes precedence)]
B29B7/50	. . . . .	with rotary casing
B29B7/52	. . . . .	with rollers or the like, e.g. calenders
B29B7/52B	. . . . .	[N: co-operating with casings]
B29B7/52B2	. . . . .	[N: with two or more rollers]
B29B7/54	. . . . .	with a single roller co-operating with a stationary member [N: other than the casing]
B29B7/56	. . . . .	with co-operating rollers[N: e.g. with repeated action, i.e. the material leaving a set of rollers being reconducted to the same set or being conducted to a next set]
B29B7/56D	. . . . .	[N: with means for axially moving the material on the rollers] [N9511]
B29B7/56D2	. . . . .	[N: at least one of the rollers being provided with helicoidal grooves or ridges, e.g. followed by axial extrusion] [N9511]
B29B7/56F	. . . . .	[N: provided with means to take material away from a set of rollers and to reconduct it to the same set; provided with endless belts, e.g. which can be in or out of cooperation with at least one of the rollers] [N9511]
B29B7/56G	. . . . .	[N: with consecutive sets of rollers or a train of rollers] [N9511]
B29B7/58	. . . . .	Component parts, details or accessories; Auxiliary operations
B29B7/58B	. . . . .	[N: for discharging, e.g. doors]
B29B7/58C	. . . . .	[N: for mixers with rollers, e.g. wedges, guides, pressing means, thermal conditioning] [C9511]
B29B7/58C2	. . . . .	[N: Drives]
B29B7/58C3	. . . . .	[N: cutting devices, e.g. movable cutting devices (scrapers for stripping the material from rollers B29B7/64B)] [N9511]
B29B7/60	. . . . .	for feeding, e.g. end guides for the incoming material [N: (B29B7/76F takes precedence; feeding predetermined amounts for mixing in general B01F15/02B7)]
B29B7/60B	. . . . .	[N: in measured doses, e.g. proportioning of several materials] [C0305]
B29B7/60D	. . . . .	[N: specially adapted for feeding calenders or the like]
B29B7/62	. . . . .	Rollers, e.g. with grooves (B29B7/56D2 takes precedence) [C9511]
B29B7/62B	. . . . .	[N: provided with cooling or heating means]

B29B7/64	. . . Stripping the material from the rollers
B29B7/64B	. . . . [N: by means of a scraper moving in the axial direction of the rollers] [N9511]
B29B7/66	. . . Recycling the material [N: (B29B7/56F takes precedence)] [C9511]
B29B7/68	. . . Positioning of rollers
B29B7/70	. . . Conditioning of rollers, e.g. cleaning
B29B7/72	. . . Measuring, controlling or regulating
B29B7/72B	. . . . [N: Safety devices]
B29B7/72C	. . . . [N: for continuous roller mixers, e.g. calenders (B29B7/72B takes precedence)]
B29B7/72D	. . . . [N: Measuring properties of mixture, e.g. temperature or density (B29B7/72C takes precedence)]
B29B7/72F	. . . . [N: Measuring data of the driving system, e.g. torque, speed, power, vibration (B29B7/72C takes precedence)]
B29B7/74	. using other mixers or combinations of [N: mixers, e.g. of] dissimilar mixers; [N: Plant]
B29B7/74B	. . [N: Mixing devices specially adapted for foamable substances (B29B7/76 takes precedence)] [C9511]
B29B7/74B3	. . . [N: with supply of gas]
B29B7/74B3B	. . . . [N: with rotatable stirrer, e.g. using an intermeshing rotor-stator system (B29B7/74B3C2 takes precedence)]
B29B7/74B3C	. . . . [N: with static or injector mixer elements]
B29B7/74B3C2	. . . . . [N: preceded or followed by rotatable stirring device]
B29B7/74B3D	. . . . [N: Methodical aspects]
B29B7/74B4	. . . [N: Plants] [N9511]
B29B7/74D	. . [N: Mixing guns, i.e. hand-held mixing units having dispensing means (B29B7/76D , B29B7/76H4 take precedence)]
B29B7/74D2	. . . [N: with driven stirrer]
B29B7/74D3	. . . [N: including means for feeding the components]
B29B7/74D4	. . . [N: for mixing components by spraying them into each other; for mixing by intersecting sheets]
B29B7/74G	. . [N: Mixing heads without moving stirrer (B29B7/74D , B29B7/76 take precedence)]
B29B7/74H	. . [N: Combinations of dissimilar mixers]
B29B7/74K	. . [N: Combinations of similar mixers]
B29B7/74M	. . [N: Mixers in which the mixing takes place at the inlet of a mould, e.g. mixing chambers situated in the mould opening]
B29B7/74P	. . [N: Systems, i.e. flow charts or diagrams; Plants] [C9511]
B29B7/74P2	. . . [N: Plants (B29B7/74B4 , B29B7/74P4 , B29B7/74P5 take precedence)] [C9511]
B29B7/74P4	. . . [N: with consecutive mixers, e.g. with premixing some of the components] [N9511]
B29B7/74P4B	. . . . [N: with stirring means for the individual components before they are mixed together] [N9511]
B29B7/74P5	. . . [N: for mixing rubber] [N9511]
B29B7/76	. . [N: Mixers] with stream-impingement mixing head
B29B7/76B	. . . [N: having additional mixing arrangements (B29B7/76H3 takes precedence)]
B29B7/76D	. . . [N: of gun-type, i.e. hand-held units having dispensing means (B29B7/76H4 takes precedence)]

- B29B7/76F . . . [N: characterised by arrangements for controlling, measuring or regulating, e.g. for feeding or proportioning the components]
- B29B7/76F2 [N: involving introducing a gas or another component in at least one of the components]
- B29B7/76F3 [N: using measuring chambers of piston or plunger type ([B29B7/76F2](#) takes precedence; for mixing in general [B01F15/04H5](#))]
- B29B7/76G [N: Parts; Accessories ([B29B7/76H5](#) takes precedence)]
- B29B7/76G2 [N: Construction of the feed orifices, bores, ports] [N1112]
- B29B7/76G2B [N: Adjustable feed orifices, e.g. for controlling the rate of feeding] [N1112]
- B29B7/76G4 [N: Construction of the mixing conduit module or chamber part] [N1112]
- B29B7/76G6 [N: Construction of the discharge orifice, opening or nozzle] [N1112]
- B29B7/76G6B [N: Adjustable discharge orifices, openings or nozzle openings, e.g. for controlling the rate of dispensing] [N1112]
- B29B7/76H [N: the mixing head having an outlet tube with a reciprocating plunger, e.g. with the jets impinging in the tube]
- B29B7/76H2 [N: having a second tube intersecting the first one with the jets impinging in the second tube]
- B29B7/76H3 [N: having additional mixing arrangements ([B29B7/76H2](#) takes precedence)]
- B29B7/76H4 [N: of the gun type, i.e. hand-held units]
- B29B7/76H5 [N: Parts; Accessories]
- B29B7/76H5B [N: Plunger constructions] [N1112]
- B29B7/76H5B1 [N: comprising recirculation channels; ducts formed in the plunger] [N1112]
- B29B7/78 . . . by gravity, e.g. falling particle mixers
- B29B7/80 . . . Component parts, details or accessories; Auxiliary operations ([B29B7/22](#), [B29B7/58](#) take precedence, [N: cleaning mixers [B01F15/00G](#)])
- B29B7/80B . . . [N: Valves]
- B29B7/80D . . . [N: Constructions or methods for cleaning the mixing or kneading device (cleaning in general B08B)] [N1112]
- B29B7/80D2 [N: Cleaning of mixers of the gun type, stream-impingement type, mixing heads] [N1112]
- B29B7/80D2B [N: Cleaning of the mixing conduit, module or chamber part] [N1112]
- B29B7/80D2D [N: Cleaning of the discharge opening, e.g. orifice of the dispenser] [N1112]
- B29B7/80D2F [N: Cleaning of the central body of the plunger] [N1112]
- B29B7/80D2H [N: Cleaning of the plunger tip] [N1112]
- B29B7/82 . . . Heating or cooling
- B29B7/82B [N: Temperature control]
- B29B7/82C [N: Apparatus therefor]
- B29B7/84 . . . Venting or degassing [N: ;Removing liquids, e.g. by evaporating components]
- B29B7/84B [N: Removing liquids in liquid form]
- B29B7/84C [N: Venting, degassing or removing evaporated components in devices with rotary stirrers]
- B29B7/84C3 [N: Removing of gaseous components before or after mixing]
- B29B7/86 . . . for working at sub- or superatmospheric pressure [N: ([B01F13/06](#) takes

- cedence)] [C0105]
- B29B7/88 . . Adding charges, [N: i.e. additives]
- B29B7/88C . . . [N: with means for treating, e.g. milling, the charges ([B29B7/90D](#) takes precedence)]
- B29B7/90 . . . Fillers or reinforcements[N: e.g. fibres]
- B29B7/90D [N: with means for pretreatment of the charges or fibres]
- B29B7/92 Wood chips or wood fibres
- B29B7/94 . . . Liquid charges
- B29B7/94B [N: involving coating particles]

- B29B9/00** **Making granules** (in general B01J; chemical aspects [C08J3/12](#))
 - B29B9/02 . by dividing preformed material
 - B29B9/04 . . in the form of plates or sheets
 - B29B9/06 . . in the form of filamentary material, e.g. combined with extrusion
 - B29B9/06B . . . [N: under-water, e.g. underwater pelletizers]
 - B29B9/08 . by agglomerating smaller particles
 - B29B9/10 . by moulding the material, i.e. treating it in the molten state
 - B29B9/12 . characterised by structure or composition
 - B29B9/14 . . fibre-reinforced
 - B29B9/16 . Auxiliary treatment of granules

- B29B11/00** **Making preforms** ([B29C61/06](#) takes precedence; [N: combined with blow-moulding [B29C49/02](#), with thermoforming [B29C51/02](#); making preforms for manufacturing of light guides [B29D11/00G10](#)])
 - B29B11/02 . by dividing preformed material, e.g. sheets, rods
 - B29B11/04 . by assembling preformed material
 - B29B11/06 . by moulding the material
 - B29B11/08 . . Injection moulding
 - B29B11/10 . . Extrusion moulding
 - B29B11/12 . . Compression moulding
 - B29B11/14 . characterised by structure or composition
 - B29B11/16 . . comprising fillers or reinforcement [N: (non-woven fabrics per se [D04H1/00](#), [D04H3/00](#))] [C9904]

- B29B13/00** **Conditioning or physical treatment of the material to be shaped** (chemical aspects [C08J3/00](#)) [N: heating, cooling or curing during shaping [B29C35/00](#); Thermal after-treatment [B29C71/02](#)]
 - B29B13/00C . [N: Treatment of sinter powders]

- B29B13/02 . by heating ([B29B13/06](#), [B29B13/08](#) take precedence)
- B29B13/02B . . [N: Heat treatment of powders]
- B29B13/02C . . [N: Melting the material to be shaped]
- B29B13/02D . . [N: Half-products, e.g. films, plates]
- B29B13/02D2 . . . [N: Hollow bodies, e.g. tubes or profiles]
- B29B13/02D2B [N: Tube ends]

- B29B13/04 . by cooling [N: (cooling moulded articles or half products [B29C35/16](#))] [C9812]
- B29B13/04C . . [N: of powders or pellets] [N9812]

- B29B13/06 . by drying ([B29B13/08](#) takes precedence; [N: drying moulded articles or half products [B29C37/00P](#)]) [C9812]
- B29B13/06B . . [N: of powder or pellets]

- B29B13/08 . by using wave energy or particle radiation

- B29B13/10 . by grinding, e.g. by triturating; by sieving; by filtering

- B29B15/00** **Pretreatment of the material to be shaped, not covered by groups [B29B7/00](#) to [B29B13/00](#)**

- B29B15/02 . of crude rubber, gutta-percha, or similar substances (tapping latex [A01G](#); Chemical aspects [C08C](#))
- B29B15/02C . . [N: Breaking up rubber bales]
- B29B15/02D . . [N: Baling of rubber]
- B29B15/04 . . Coagulating devices
- B29B15/06 . . Washing devices

- B29B15/08 . of reinforcements or fillers (chemical aspects [C08J](#), K)
- B29B15/10 . . Coating or impregnating [N: independently of the moulding or shaping step] (applying liquids in general [B05](#))

- [N: **Note**
Where the coating or impregnating is combined with moulding the documents are classified in [B29C53/80B8](#), [B29C67/14C](#)]
- B29B15/10B . . . [N: of reinforcement of definite length with a matrix in solid form e.g. powder, fibre or sheet form (calendering [B29C70/50B2](#))] [C0901]
- B29B15/12 . . . of reinforcements of indefinite length
- B29B15/12B [N: with a matrix in liquid form, e.g. as melt, solution or latex]
- B29B15/12B2 [N: by dipping]
- B29B15/12B3 [N: by spraying]
- B29B15/14 of filaments or wires

- B29B17/00** **Recovery of plastics or other constituents of waste material containing plastics; ([N: volume reduction of waste plastics, e.g. by mechanical compacting or melting disposal of solid waste [B09B](#);] chemical recovery [C08J11/00](#))**

- B29B17/00B . [N: Direct recuperation and re-use of scrap material during moulding operation, i.e. feed-back of used material]
- B29B17/00D . [N: by agglomeration or compacting] [N9510] [C9810]
- B29B17/00D2 . . [N: of large particles, e.g. beads, granules, pellets, flakes, slices] [N9510]
- B29B17/00D4 . . [N: for shaping parts, e.g. multilayered parts with at least one layer containing regenerated plastic] [N9510]
- B29B17/00D6 . . [N: Compacting complete waste articles] [N9810]
- B29B17/00D6B . . . [N: Hollow articles, e.g. bottles] [N9810]
- B29B17/02 . Separating plastics from other materials
- B29B17/02D . . [N: Selectively separating reinforcements from matrix material by destroying the interface bound before desintegrating the matrix to particles or powder, e.g. from tires or belts] [N9904]
- B29B17/02D2 . . . [N: using local heating of the reinforcement] [N9904]
- B29B17/04 . Disintegrating plastics, [N: e.g. by milling] ([B29B9/02](#), [B29B11/02](#), [B29B13/10](#), [N: [B29B17/02](#)] take precedence) [N1003]
- B29B17/04C . . [N: to powder] [N1003]
- B29B17/04C2 . . . [N: using cryogenic systems] [N1003]
- B29B17/04D . . [N: to large particles, e.g. beads, granules, flakes, slices] [N1003]