B B29B

COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SHAPING

B29 WORKING OF PLASTICS; WORKING OF SUBSTANCES IN A PLASTIC STATE IN GENERAL

(NOTES omitted)

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

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

7/00 Mixing; Kneading (for preparation of dough A21C 1/00; in general B01F; combined with calendering B29C 43/24, with injection B29C 45/46, with extrusion B29C 48/36)

7/002 . . . [Methods (chemical aspects C08J 3/00)]

7/005 . . . . (for mixing in batches)

7/007 . . . (for continuous mixing)

7/02 . . . non-continuous, with mechanical mixing or kneading devices, i.e. batch type

7/04 . . . with non-movable mixing or kneading devices

7/06 . . . with movable mixing or kneading devices

7/08 . . . shaking, oscillating or vibrating

7/085 . . . . . . . [by means of axially movable pistons]

7/10 . . . rotary

7/103 . . . . . . . with rollers or the like in casings

7/106 . . . . . . . [using rotary casings]

7/12 . . . . . . . with single shaft

7/125 . . . . . . . [having a casing closely surrounding the rotor, e.g. for masticating rubber (with more than one shaft B29B 7/183): Rotors therefor (B29B 7/14, B29B 7/16 take precedence)]

7/14 . . . . . . . with screw or helix

7/16 . . . . . . . with paddles or arms

7/18 . . . . . . . with more than one shaft

7/183 . . . . . . . [having a casing closely surrounding the rotors, e.g. of Banbury type (with single shaft B29B 7/125)]

7/186 . . . . . . . [Rotors therefor]

7/20 . . . . . . . with intermeshing devices, e.g. screws

7/22 . . . Component parts, details or accessories; Auxiliary operations

7/24 . . . . . . . for feeding

7/242 . . . . . . . [in measured doses]

7/244 . . . . . . . . [of several materials]

7/246 . . . . . . . . . [in mixers having more than one rotor and a casing closely surrounding the rotors, e.g. with feeding plungers]

7/248 . . . . . . . [with plungers for introducing the material, e.g. from below (B29B 7/246 takes precedence)]

7/26 . . . for discharging, e.g. doors

7/263 . . . . . . . [from the underside in mixers having more than one rotor and a casing closely surrounding the rotors]

7/266 . . . . . . . [using sliding doors]

7/28 . . . for measuring, controlling or regulating, e.g. viscosity control (B29B 7/242 takes precedence)

7/283 . . . . . . . . . . . (measuring data of the driving system, e.g. torque, speed, power)

7/286 . . . . . . . . . . . [measuring properties of the mixture, e.g. temperature, density (B29B 7/283 takes precedence)]

7/30 . . . continuous, with mechanical mixing or kneading devices

7/32 . . . with non-movable mixing or kneading devices

7/325 . . . . . . . [Static mixers (in general B01F 5/0602)]

7/34 . . . with movable mixing or kneading devices

7/36 . . . shaking, oscillating or vibrating

7/365 . . . . . . . [by means of axially movable pistons]

7/38 . . . rotary (B29B 7/32 takes precedence)

7/385 . . . . . . . [fluid mixers]

7/40 . . . . . . . with single shaft

7/401 . . . . . . . [having a casing closely surrounding the rotor, e.g. with a plunger for feeding the material (B29B 7/407, B29B 7/42 take precedence)]

7/402 . . . . . . . [using a rotor-stator system with intermeshing elements, e.g. teeth (B29B 7/408, B29B 7/404 take precedence)]

7/404 . . . . . . . [with feeding or valve actuating means, e.g. with cleaning means]

7/405 . . . . . . . [Mixing heads (B29B 7/404, B29B 7/42 take precedence; mixing heads without moving sturrer B29B 7/457)]

7/407 . . . . . . . [with a casing closely surrounding the rotor, e.g. with conical rotor]
with rollers or the like, e.g. calenders with a single roller co-operating with a casings

with more than one shaft

with screw or helix

with screw and additionally other mixing elements on the same shaft, e.g. paddles, discs, bearings, rotor blades of the Banbury type

with screw sections co-operating, e.g. intermeshing, with elements on the wall of the surrounding casing

and oscillating axially (in general B01F 11/0057)

with conical screw surrounded by conical casing

with screw surrounded by a casing provided with grooves or cavities

with consecutive casings or screws, e.g. for charging, discharging, mixing

with independently driven screws rotating about the same axis, e.g. oscillating axially; with axially oscillating screws (B29B 7/423 takes precedence)

Parts or accessories, e.g. casings, feeding or discharging means

(Screws (B29B 7/421 takes precedence))

with paddles or arms

with more than one shaft

(each shaft comprising rotor parts of the Banbury type in addition to screw parts)

with intermeshing devices, e.g. screws

provided with paddles, gears or discs (B29B 7/482 takes precedence)

provided with screw parts in addition to other mixing parts, e.g. paddles, gears, discs

(the other mixing parts being discs perpendicular to the screw axis)

with two shafts provided with screws, e.g. one screw being shorter than the other (B29B 7/482 takes precedence)

with three or more shafts provided with screws

with screws surrounded by a casing provided with grooves or cavities

with consecutive casings or screws, e.g. for feeding, discharging, mixing

Parts, e.g. casings, sealings; Accessories, e.g. flow controlling or throttling devices (discharging B29B 7/582; feeding B29B 7/60)

(Screws (B29B 7/482 takes precedence))

with rotary casing

with rollers or the like, e.g. calenders

(co-operating with casings)

(with two or more rollers)

with a single roller co-operating with a stationary member (other than the casing)

with co-operating rollers, e.g. with repeated action, i.e. the material leaving a set of rollers being recomposed to the same set or being conducted to a next set

with means for axially moving the material on the rollers

(at least one of the rollers being provided with helicoidal grooves or ridges, e.g. followed by axial extrusion)

provided with means to take material away from a set of rollers and to recompose 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

(with consecutive sets of rollers or a train of rollers)

Component parts, details or accessories; Auxiliary operations

(for discharging, e.g. doors)

(for mixers with rollers, e.g. wedges, guides, pressing means, thermal conditioning)

(Drives)

(cutting devices, e.g. movable cutting devices (scrapers for stripping the material from rollers B29B 7/645))

for feeding, e.g. end guides for the incoming material (B29B 7/7615 takes precedence; feeding predetermined amounts for mixing in general B01F 15/0216)

(in measured doses, e.g. proportioning of several materials)

(specially adapted for feeding calenders or the like)

Rollers, e.g. with grooves (B29B 7/564 takes precedence)

(provided with cooling or heating means)

Stripping the material from the rollers

(by means of a scraper moving in the axial direction of the rollers)

Recycling the material (B29B 7/566 takes precedence)

Positioning of rollers

Conditioning of rollers, e.g. cleaning

Measuring, controlling or regulating

(Safety devices)

(for continuous roller mixers, e.g. calenders B29B 7/722 takes precedence)

(Measuring properties of mixture, e.g. temperature or density (B29B 7/724 takes precedence))

(Measuring data of the driving system, e.g. torque, speed, power, vibration (B29B 7/724 takes precedence))

using other mixers or combinations of {mixers, e.g. of} dissimilar mixers ( ; Plant)

(Mixing devices specially adapted for foamable substances (B29B 7/76 takes precedence))

(with supply of gas)

(with rotatable stirrer, e.g. using an intermeshing rotor-stator system (B29B 7/423 takes precedence))

(with static or injector mixer elements)
{Mixers} with stream-impingement mixing head

{Systems, i.e. flow charts or diagrams; Plants}

Moulding the material, i.e. treating it in the molten state

Auxiliary treatment of granules

Making granules (in general B01J; chemical aspects C081 3/12)
11/00 Making preforms (B29C 61/06 takes precedence ; combined with blow-moulding B29C 49/02, with thermoforming B29C 51/02; making preforms for manufacturing of light guides B29D 11/00721))

11/02 . . by dividing preformed material, e.g. sheets, rods
11/04 . . by assembling preformed material
11/06 . . by moulding the material
11/08 . . Injection moulding
11/10 . . Extrusion moulding
11/12 . . Compression moulding
11/14 . . characterised by structure or composition
11/16 . . comprising fillers or reinforcement { (non-woven fabrics per se D04H 1/00, D04H 3/00)

13/00 Conditioning or physical treatment of the material to be shaped (chemical aspects C08J 3/00 ; heating, cooling or curing during shaping B29C 35/00; thermal after-treatment B29C 71/02)

2013/002 . . (Extracting undesirable residual components, e.g. solvents, unreacted monomers, from material to be moulded)
2013/005 . . (Degassing undesirable residual components, e.g. gases, unreacted monomers, from material to be moulded)
13/007 . . (Treatment of sinter powders)
13/02 . . by heating (B29B 13/06, B29B 13/08 take precedence)
13/021 . . (Heat treatment of powders)
13/022 . . (Melting the material to be shaped)
13/023 . . (Half-products, e.g. films, plates)
13/024 . . . (Hollow bodies, e.g. tubes or profiles)
13/025 . . . (Tube ends)
2013/026 . . . (Obtaining a uniform temperature over the whole surface of films or tubes)
2013/027 . . . (Obtaining a temperature gradient over the surface of films or tubes)
2013/028 . . . (Obtaining a temperature gradient across the wall thickness of plates or tubes)
13/04 . . by cooling (cooling moulded articles or half products B29C 35/16)
13/045 . . . (of powders or pellets)
13/06 . . by drying (B29B 13/08 takes precedence ; drying moulded articles or half products B29C 37/0092)
13/065 . . . (of powder or pellets)
13/08 . . by using wave energy or particle radiation
13/10 . . by grinding, e.g. by triturating; by sieving; by filtering

15/00 Pretreatment of the material to be shaped, not covered by groups B29B 7/00 - B29B 13/00

15/02 . . of crude rubber, gutta-percha, or similar substances (tapping latex A01G; chemical aspects C08C)
15/023 . . . (Breaking up rubber bales)
15/026 . . . (Baling of rubber)
15/04 . . . Coagulating devices
15/06 . . . Washing devices
15/08 . . . of reinforcements or fillers (chemical aspects C08J, C08K)

15/10 . . Coating or impregnating { independently of the moulding or shaping step} (applying liquids in general B05)

**NOTE**

Where the coating or impregnating is combined with moulding the documents are classified in B29C 53/8066, B29C 70/00

15/105 . . . . . . . . . (of reinforcement of definite length with a matrix in solid form, e.g. powder, fibre or sheet form (calendering B29C 70/506))
15/12 . . . . . . . . . (of reinforcements of indefinite length)
15/122 . . . . . . . . . (with a matrix in liquid form, e.g. as melt, solution or latex)
15/125 . . . . . . . . . (by dipping)
15/127 . . . . . . . . . (by spraying)
15/14 . . . . . . . . . of filaments or wires

17/00 Recovery of plastics or other constituents of waste material containing plastics; (volume reduction of waste plastics, e.g. by mechanical compacting or melting disposal of solid waste B09B; chemical recovery C08J 11/00)

17/0005 . . . . . (Direct recuperation and re-use of scrap material during moulding operation, i.e. feed-back of used material)
17/001 . . . . . (Pretreating the materials before recovery)
17/0015 . . . . (Washing, rinsing)
17/0021 . . . . (Dividing in large parts)
17/0026 . . . . (by agglomeration or compacting)
17/0031 . . . . (Melting the outer surface of compressed waste, e.g. for forming briquets by expelling the compressed waste material through a heated tool)
17/0036 . . . . . . (of large particles, e.g. beads, granules, pellets, flakes, slices)
17/0042 . . . . . . (for shaping parts, e.g. multilayered parts with at least one layer containing regenerated plastic)
17/0047 . . . . . . (Compacting complete waste articles)
17/0052 . . . . . . (Hollow articles, e.g. bottles)
17/0057 . . . . . . (Externally powered deformation tools, e.g. tools being part of relatively big non domestic installations, powered by motors)
17/0063 . . . . . . (Manually driven deformation tools, e.g. tools being part of domestic installations)
17/0068 . . . . . . (Softening the hollow articles by heat and causing permanent deformation)
17/0073 . . . . . . (Removing caps or labels during deformation)
17/0078 . . . . . . (Maintaining the deflated state, e.g. by mounting original screw lids after deformation)
17/0084 . . . . . . (Deflating the hollow articles by vacuum; Details of the nozzles used in the vacuum generating devices)
17/0089 . . . . . . (Recycling systems, wherein the flow of products between producers, sellers and consumers includes at least a recycling step, e.g. the products being fed back to the sellers or to the producers for recycling purposes)
17/0094 . . . . . (Mobile recycling devices, e.g. devices installed in truck trailers)
17/02 . . . . . . . . (Separating plastics from other materials)
17/0203 . . . . . (Separating plastics from plastics)
B29B

17/0206 . . . [Selectively separating reinforcements from matrix material by destroying the interface bound before disintegrating the matrix to particles or powder, e.g. from tires or belts]
17/021 . . . . [using local heating of the reinforcement]
17/0213 . . . [Specific separating techniques]
17/0217 . . . [Mechanical separating techniques; devices therefor]
17/022 . . . . [Grippers, hooks, piercing needles, fingers, e.g. mounted on robots]
17/0224 . . . [Screens, sieves]
17/0227 . . . [Vibratory or shaking tables]
17/0231 . . . [Centrifugating, cyclones]
17/0234 . . . [using gravity, e.g. separating by weight differences in a wind sifter]
17/0237 . . . . [using density difference]
17/0241 . . . [in gas, e.g. air flow]
17/0244 . . . [in liquids]
17/0248 . . . [Froth flotation, i.e. wherein gas bubbles are attached to suspended particles in an aerated liquid]
17/0251 . . . [Hydropulping for converting the material under the influence of water into a slurry, e.g. for separating laminated plastic from paper]
17/0255 . . . [using different melting or softening temperatures of the materials to be separated]
17/0258 . . . [using heated surfaces for selective softening or melting of at least one plastic ingredient]
17/0262 . . . . [using electrical characteristics]
17/0265 . . . [Electrostatic separation]
17/0268 . . . [Separation of metals]
17/0272 . . . . [Magnetic separation]
17/0275 . . . . [using chemical sensors, e.g. analysing gasified constituents]
17/0279 . . . . [Optical identification, e.g. cameras or spectroscopy]
17/0282 . . . . [using information associated with the materials, e.g. labels on products]
17/0286 . . . . [Cleaning means used for separation]
17/0289 . . . [Washing the materials in liquids]
17/0293 . . . . [Dissolving the materials in gases or liquids]
17/0296 . . . . [Dissolving the materials in aqueous alkaline solutions, e.g. NaOH or KOH]

17/04 . Disintegrating plastics, [e.g. by milling] (B29B 9/02, B29B 11/02, B29B 13/10, B29B 17/02) take precedence
17/0404 . . . . [to powder]
17/0408 . . . . [using cryogenic systems]
17/0412 . . . . [to large particles, e.g. beads, granules, flakes, slices]
17/0416 . . . . [Cooling the plastics before disintegration, e.g. freezing]
17/042 . . . . . [Mixing disintegrated particles or powders with other materials, e.g. with virgin materials]
17/0424 . . . . . [Specific disintegrating techniques; devices therefor]
17/0428 . . . . . [Jets of high pressure fluid]
17/0432 . . . . . [Abrasive blasting, i.e. the jets being charged with abrasives]
17/0436 . . . . . [Immersion baths]
17/044 . . . . . . [Knives]
17/0444 . . . . . . [Cutting wires, e.g. vibrating wires]

2017/0448 . . . [Cutting discs]
2017/0452 . . . . [the discs containing abrasives]
2017/0456 . . . . [Pressing tools with calibrated openings, e.g. in sizing plates, for disintegrating solid materials]
2017/046 . . . . . [Extruder as pressing tool with calibrated die openings for forming and disintegrating pasty or melted material]
2017/0464 . . . . [Solid state shear extrusion pulverisation]
2017/0468 . . . . [ Crushing, i.e. disintegrating into small particles]
2017/0472 . . . . . [Balls or rollers in a container]
2017/0476 . . . . . [Cutting or tearing members, e.g. spiked or toothed cylinders or intermeshing rollers]
2017/048 . . . . . [Grinding tools, roller mills or disc mills]
2017/0488 . . . . . . [Hammers or beaters]
2017/0492 . . . . . . [Projecting the material on stationary or moving impact surfaces or plates]
2017/0496 . . . . . . [Pyrolyzing the materials]

2911/00 Indexing scheme related to making preforms for blow-moulding bottles or the like
2911/14 . Layer configuration, geometry, dimensions or physical properties of preforms for blow-moulding bottles or the like
2911/14006 . . . .layer configuration
2911/14013 . . . .monolayered
2911/1402 . . . . .at neck portion
2911/14026 . . . . .at flange portion
2911/14033 . . . . .at body portion
2911/1404 . . . . . .at bottom portion
2911/14046 . . . . .multilayered
2911/14053 . . . . . .at neck portion
2911/1406 . . . . . . .partially
2911/14066 . . . . . . .at flange portion
2911/14073 . . . . . . .partially
2911/1408 . . . . . . .at body portion
2911/14086 . . . . . . .partially
2911/14093 . . . . . . .at bottom portion
2911/141 . . . . . . .partially
2911/14106 . . . . .having at least one layer
2911/14113 . . . . .having at least two layers
2911/1412 . . . . . .having at least three layers
2911/14126 . . . . .having more than three layers
2911/14133 . . . . .having at least one layer being injected
2911/1414 . . . . . .having at least two layers being injected
2911/14146 . . . . . .having at least three layers being injected
2911/14153 . . . . . .having more than three layers being injected
2911/1416 . . . . . having at least one layer being extruded
2911/14166 . . . . . having at least two layers being extruded
2911/14173 . . . . . having at least three layers being extruded
2911/1418 . . . . . having more than three layers being extruded
2911/14186 . . . . . having at least one layer being thermoformed
2911/14193 . . . . . having at least two layers being thermoformed
2911/1414 . . . . . . having at least three layers being thermoformed
2911/14206 . . . . . having more than three layers being thermoformed
2911/14213 . . . . . . having at least one layer being compression moulded
2911/1422 . . . . . . having at least two layers being compression moulded
2911/14226 . . . . . . having at least three layers being compression moulded
2911/14233 . . . . . . having more than three layers being compression moulded
2911/1424 . . . . . . having at least one layer being applied using techniques not covered by B29B 2911/14133 - B29B 2911/14213
2911/14246 . . . . . . having at least two layers being applied using said techniques
2911/14253 . . . . . . having at least three layers being applied using said techniques
2911/1426 . . . . . . having more than three layers being applied using said techniques
2911/14266 . . . . . . Type of said techniques not covered by B29B 2911/14133 - B29B 2911/14213
2911/14273 . . . . . . Spray coating
2911/1428 . . . . . . Dip coating
2911/14286 . . . . . . Powder coating
2911/14293 . . . . . . Casting
2911/1413 . . . . . . Interaction between at least two layers
2911/143 . . . . . . by welding
2911/14313 . . . . . . by using adhesives
2911/1432 . . . . . . Geometry
2911/14326 . . . . . . Variable wall thickness
2911/14328 . . . . . . at neck portion
2911/1433 . . . . . . at flange portion
2911/14331 . . . . . . at body portion
2911/14332 . . . . . . at bottom portion
2911/14333 . . . . . . Variable diameter
2911/14335 . . . . . . at neck portion
2911/14336 . . . . . . at flange portion
2911/14337 . . . . . . at body portion
2911/14338 . . . . . . at bottom portion
2911/1434 . . . . . . Ribs or protrusions
2911/14341 . . . . . . at neck portion
2911/14343 . . . . . . at flange portion
2911/14344 . . . . . . at body portion
2911/14345 . . . . . . at bottom portion
2911/14346 . . . . . . Internal separating wall
2911/14348 . . . . . . at neck portion
2911/1435 . . . . . . at flange portion
2911/14351 . . . . . . at body portion
2911/14352 . . . . . . at bottom portion
2911/14353 . . . . . . Special shape
2911/1436 . . . . . . Special overall shape
2911/14366 . . . . . . Conical
2911/14373 . . . . . . Axially asymmetrical
2911/1438 . . . . . . Elliptic or oval cross-section shape
2911/14386 . . . . . . Rectangular cross-section shape
2911/14393 . . . . . . Hexagonal cross-section shape
2911/144 . . . . . . Shape allows stacking or nesting
2911/14406 . . . . . . Special shape of specific parts of preform
2911/14413 . . . . . . Special lip, i.e. very top of preform neck
2911/1442 . . . . . . Special neck
2911/14426 . . . . . . Wide-mouth
2911/14433 . . . . . . Closure retaining means
2911/1444 . . . . . . Threads
2911/14446 . . . . . . Interrupted threads
2911/14453 . . . . . . Inner threads
2911/1446 . . . . . . No threads
2911/14466 . . . . . . Tamper-evident band retaining ring
2911/14473 . . . . . . Special flange
2911/1448 . . . . . . Special body
2911/14486 . . . . . . Special bottom
2911/14493 . . . . . . Special sprue, i.e. injection mark
2911/145 . . . . . . Special pinch-off portion
2911/14506 . . . . . . Auxiliary parts or inserts
2911/14513 . . . . . . Handle
2911/1452 . . . . . . Closure
2911/14526 . . . . . . Transport means
2911/14533 . . . . . . Dispensing spout
2911/1454 . . . . . . Parts to assist orientation of preform, e.g. in mould
2911/14546 . . . . . . at neck portion
2911/14553 . . . . . . at flange portion
2911/1456 . . . . . . at body portion
2911/14566 . . . . . . at bottom portion
2911/14573 . . . . . . Preform, i.e. neck, flange, body and bottom, made of several individual parts
2911/1458 . . . . . . Finish neck ring
2911/14586 . . . . . . Mentioned dimensions
2911/14593 . . . . . . Wall thickness
2911/14596 . . . . . . of the lip, i.e. the very top of the preform neck
2911/1460 . . . . . . of the neck
2911/14606 . . . . . . of the neck
2911/14613 . . . . . . of the threads
2911/1462 . . . . . . of the tamper-evident band retaining ring
2911/14626 . . . . . . of the flange
2911/14633 . . . . . . of the body
2911/1464 . . . . . . of the bottom
2911/14646 . . . . . . of a layer
2911/14653 . . . . . . Diameter, D
2911/14656 . . . . . . of the lip, i.e. the very top of the preform neck
2911/1466 . . . . . . of the neck
2911/14666 . . . . . . of the neck
2911/14673 . . . . . . of the threads
2911/1468 . . . . . . of the tamper-evident band retaining ring
2911/14686 . . . . . . of the flange
2911/14693 . . . . . . of the body
2911/147 . . . . . . of the bottom
2911/14706 . . . . . . of a layer
2911/14713 . . . . . . Height, length, L
2911/1472 . . . . . . of the lip, i.e. the very top of the preform neck
2911/14726 . . . . . . of the neck
2911/14733 . . . . . . of the threads
2911/1474 . . . . . . of the tamper-evident band retaining ring
2911/14746 . . . . . . of the flange
2911/14753 . . . . . . of the body
2911/1476 . . . . . . of the bottom
2911/14766 . . . . . . of a layer
2911/14773 . . . . . . Ratio L/D
2911/1478 . . . . . . Angle
2911/14786 . . . . . . of the lip, i.e. the very top of the preform neck
2911/14793 . . . . . . of the neck
2911/148 . . . . . . of the threads
2911/14806 . . . . . . of the tamper-evident band retaining ring
2911/14813 . . . . . . of the flange
2911/1482 . . . . . . of the body
of the bottom
of a layer
Curvature, e.g. radius
of the lip, i.e. the very top of the preform
neck
of the neck
of the threads
of the tamper-evident band retaining ring
of the flange
of the body
of the bottom
of a layer
Mentioned values not covered by B29B 2911/14586

Crystallinity
at the neck portion
at the flange portion
at the body portion
at the bottom portion
Surface roughness
at the neck portion
at the flange portion
at the body portion
at the bottom portion
Optical properties
Weight
Composition
Recycled material