

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>B</b>          | <b>Sektion</b>      | <b>SECTION B — PERFORMING OPERATIONS; TRANSPORTING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>B29</b>        | <b>Klasse</b>       | <b>WORKING OF PLASTICS; WORKING OF SUBSTANCES IN A PLASTIC STATE IN GENERAL (processing doughs A21C; working chocolate A23G; casting of metals B22; working cement, clay B28; chemical aspects, <u>see</u> section C, particularly C08; working glass C03B; candle making C11C 5/02; making soap C11D 13/00; manufacture of artificial filaments, threads, fibres, bristles or ribbons D01D, D01F; manufacture of articles from cellulosic fibrous suspensions or from papier-mâche D21J)</b> |
| <b>B29C</b>       | <b>Unterklasse</b>  | <b>SHAPING OR JOINING OF PLASTICS; SHAPING OF SUBSTANCES IN A PLASTIC STATE, IN GENERAL; AFTER- TREATMENT OF THE SHAPED PRODUCTS, e.g. REPAIRING (working in the manner of metal B23; grinding, polishing B24; cutting B26D, B26F; making preforms B29B 11/00) [4]</b><br><b><u>Component parts, details or accessories; Auxiliary operations [4]</u></b>                                                                                                                                     |
| <b>B29C 31/00</b> | <b>Hauptgruppe</b>  | <b>Handling, e.g. feeding of the material to be shaped (in general B65G) [4]</b>                                                                                                                                                                                                                                                                                                                                                                                                              |
| B29C 31/02        | 1-Punkt Untergruppe | . Dispensing from vessels, e.g. hoppers [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| B29C 31/04        | 1-Punkt Untergruppe | . Feeding, e.g. into a mould cavity (to presses in general B30B 15/30) [4]                                                                                                                                                                                                                                                                                                                                                                                                                    |
| B29C 31/06        | 2-Punkt Untergruppe | . . in measured doses (in general G01F) [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| B29C 31/08        | 2-Punkt Untergruppe | . . of preforms [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| B29C 31/10        | 2-Punkt Untergruppe | . . of several materials [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>B29C 33/00</b> | <b>Hauptgruppe</b>  | <b>Moulds or cores; Details thereof or accessories therefor [4]</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| B29C 33/02        | 1-Punkt Untergruppe | . with incorporated heating or cooling means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| B29C 33/04        | 2-Punkt Untergruppe | . . using liquids, gas or steam [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| B29C 33/06        | 2-Punkt Untergruppe | . . using radiation [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| B29C 33/08        | 2-Punkt Untergruppe | . . for dielectric heating [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| B29C 33/10        | 1-Punkt Untergruppe | . with incorporated venting means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| B29C 33/12        | 1-Punkt Untergruppe | . with incorporated means for positioning inserts, e.g. labels [4]                                                                                                                                                                                                                                                                                                                                                                                                                            |
| B29C 33/14        | 2-Punkt Untergruppe | . . against the mould wall [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| B29C 33/16        | 3-Punkt Untergruppe | . . . using magnetic means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| B29C 33/18        | 3-Punkt Untergruppe | . . . using vacuum [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| B29C 33/20        | 1-Punkt Untergruppe | . Opening, closing or clamping [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| B29C 33/22        | 2-Punkt Untergruppe | . . by rectilinear movement [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| B29C 33/24        | 3-Punkt Untergruppe | . . . using hydraulic or pneumatic means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| B29C 33/26        | 2-Punkt Untergruppe | . . by pivotal movement [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| B29C 33/28        | 3-Punkt Untergruppe | . . . using hydraulic or pneumatic means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| B29C 33/30        | 1-Punkt Untergruppe | . Mounting, exchanging or centering [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| B29C 33/32        | 2-Punkt Untergruppe | . . using magnetic means [4]                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                      |
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| B29C 33/34        | 1-Punkt Untergruppe | . movable, e.g. to or from the moulding station [4]                                                                                                                                                                                                                        |
| B29C 33/36        | 2-Punkt Untergruppe | . . continuously movable [4]                                                                                                                                                                                                                                               |
| B29C 33/38        | 1-Punkt Untergruppe | . characterised by the material or the manufacturing process (B29C 33/44 takes precedence; manufacture of moulds or parts thereof from metal B22, B23) [4]                                                                                                                 |
| B29C 33/40        | 2-Punkt Untergruppe | . . Plastics, e.g. foam, rubber [4]                                                                                                                                                                                                                                        |
| B29C 33/42        | 1-Punkt Untergruppe | . characterised by the shape of the moulding surface, e.g. ribs, grooves [4]                                                                                                                                                                                               |
| B29C 33/44        | 1-Punkt Untergruppe | . with means for, or specially constructed to facilitate, the removal of articles, e.g. of undercut articles [4]                                                                                                                                                           |
| B29C 33/46        | 2-Punkt Untergruppe | . . using fluid pressure [4]                                                                                                                                                                                                                                               |
| B29C 33/48        | 2-Punkt Untergruppe | . . with means for collapsing or disassembling [4]                                                                                                                                                                                                                         |
| B29C 33/50        | 3-Punkt Untergruppe | . . . elastic [4]                                                                                                                                                                                                                                                          |
| B29C 33/52        | 2-Punkt Untergruppe | . . soluble or fusible [4]                                                                                                                                                                                                                                                 |
| B29C 33/54        | 2-Punkt Untergruppe | . . made of powdered or granular material [4]                                                                                                                                                                                                                              |
| B29C 33/56        | 1-Punkt Untergruppe | . Coatings; Releasing, lubricating or separating agents [4]                                                                                                                                                                                                                |
| B29C 33/58        | 2-Punkt Untergruppe | . . Applying the releasing agents [4]                                                                                                                                                                                                                                      |
| B29C 33/60        | 2-Punkt Untergruppe | . . Releasing, lubricating or separating agents [4]                                                                                                                                                                                                                        |
| B29C 33/62        | 3-Punkt Untergruppe | . . . based on polymers or oligomers [4]                                                                                                                                                                                                                                   |
| B29C 33/64        | 4-Punkt Untergruppe | . . . . Silicone [4]                                                                                                                                                                                                                                                       |
| B29C 33/66        | 4-Punkt Untergruppe | . . . . Cellulose; Derivatives thereof [4]                                                                                                                                                                                                                                 |
| B29C 33/68        | 2-Punkt Untergruppe | . . Release sheets [4]                                                                                                                                                                                                                                                     |
| B29C 33/70        | 1-Punkt Untergruppe | . Maintenance [4]                                                                                                                                                                                                                                                          |
| B29C 33/72        | 2-Punkt Untergruppe | . . Cleaning [4]                                                                                                                                                                                                                                                           |
| B29C 33/74        | 2-Punkt Untergruppe | . . Repairing [4]                                                                                                                                                                                                                                                          |
| B29C 33/76        | 1-Punkt Untergruppe | . Cores (B29C 33/02-B29C 33/70 take precedence) [4]                                                                                                                                                                                                                        |
| <b>B29C 35/00</b> | <b>Hauptgruppe</b>  | <b>Heating, cooling or curing, e.g. crosslinking, vulcanising; Apparatus therefor (moulds with incorporated heating or cooling means B29C 33/02; curing devices for plastics dental prostheses A61C 13/14; before moulding B29B 13/00; chemical aspects C08J 3/00) [4]</b> |
| B29C 35/02        | 1-Punkt Untergruppe | . Heating or curing, e.g. crosslinking, vulcanising (cold vulcanisation B29C 35/18) [4]                                                                                                                                                                                    |
| B29C 35/04        | 2-Punkt Untergruppe | . . using liquids, gas or steam [4]                                                                                                                                                                                                                                        |
| B29C 35/06        | 3-Punkt Untergruppe | . . . for articles of indefinite length [4]                                                                                                                                                                                                                                |
| B29C 35/08        | 2-Punkt Untergruppe | . . by wave energy or particle radiation [4]                                                                                                                                                                                                                               |
| B29C 35/10        | 3-Punkt Untergruppe | . . . for articles of indefinite length [4]                                                                                                                                                                                                                                |
| B29C 35/12        | 2-Punkt Untergruppe | . . Dielectric heating [4]                                                                                                                                                                                                                                                 |
| B29C 35/14        | 3-Punkt Untergruppe | . . . for articles of indefinite length [4]                                                                                                                                                                                                                                |
| B29C 35/16        | 1-Punkt Untergruppe | . Cooling [4]                                                                                                                                                                                                                                                              |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                                             |
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| B29C 35/18        | 1-Punkt Untergruppe | . Cold vulcanisation [4]                                                                                                                                                                                                                                                                          |
| <b>B29C 37/00</b> | <b>Hauptgruppe</b>  | <b>Component parts, details, accessories or auxiliary operations, not covered by group B29C 33/00 or B29C 35/00 [4]</b>                                                                                                                                                                           |
| B29C 37/02        | 1-Punkt Untergruppe | . Deburring or deflashing (by grinding or polishing B24B) [4]                                                                                                                                                                                                                                     |
| B29C 37/04        | 2-Punkt Untergruppe | . . of welded articles, e.g. deburring or deflashing in combination with welding [4]                                                                                                                                                                                                              |
| <b>B29C 39/00</b> | <b>Hauptgruppe</b>  | <b>Particular shaping techniques, e.g. moulding, joining; Apparatus therefor [4]</b><br><b>Shaping by casting, i.e. introducing the moulding material into a mould or between confining surfaces without significant moulding pressure; Apparatus therefor (B29C 41/00 takes precedence ) [4]</b> |
| B29C 39/02        | 1-Punkt Untergruppe | . for making articles of definite length, i.e. discrete articles [4]                                                                                                                                                                                                                              |
| B29C 39/04        | 2-Punkt Untergruppe | . . using movable moulds (B29C 41/02 takes precedence) [4]                                                                                                                                                                                                                                        |
| B29C 39/06        | 3-Punkt Untergruppe | . . . continuously movable, e.g. along a production line [4]                                                                                                                                                                                                                                      |
| B29C 39/08        | 3-Punkt Untergruppe | . . . Introducing the material into the mould by centrifugal force [4]                                                                                                                                                                                                                            |
| B29C 39/10        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. casting around inserts or for coating articles [4]                                                                                                                                                                                              |
| B29C 39/12        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                                                                                                                                                                                             |
| B29C 39/14        | 1-Punkt Untergruppe | . for making articles of indefinite length [4]                                                                                                                                                                                                                                                    |
| B29C 39/16        | 2-Punkt Untergruppe | . . between endless belts [4]                                                                                                                                                                                                                                                                     |
| B29C 39/18        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. casting around inserts or for coating articles [4]                                                                                                                                                                                              |
| B29C 39/20        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                                                                                                                                                                                             |
| B29C 39/22        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                                                                                                                                                                                                               |
| B29C 39/24        | 2-Punkt Untergruppe | . . Feeding the material into the mould [4]                                                                                                                                                                                                                                                       |
| B29C 39/26        | 2-Punkt Untergruppe | . . Moulds or cores [4]                                                                                                                                                                                                                                                                           |
| B29C 39/28        | 3-Punkt Untergruppe | . . . with means to avoid flashes [4]                                                                                                                                                                                                                                                             |
| B29C 39/30        | 3-Punkt Untergruppe | . . . with means for cutting the article [4]                                                                                                                                                                                                                                                      |
| B29C 39/32        | 3-Punkt Untergruppe | . . . with joints or the like for making the mould impervious [4]                                                                                                                                                                                                                                 |
| B29C 39/34        | 3-Punkt Untergruppe | . . . for undercut articles [4]                                                                                                                                                                                                                                                                   |
| B29C 39/36        | 2-Punkt Untergruppe | . . Removing moulded articles [4]                                                                                                                                                                                                                                                                 |
| B29C 39/38        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                                                                                                                                                                                                        |
| B29C 39/40        | 2-Punkt Untergruppe | . . Compensating volume change, e.g. retraction [4]                                                                                                                                                                                                                                               |
| B29C 39/42        | 2-Punkt Untergruppe | . . Casting under special conditions, e.g. vacuum [4]                                                                                                                                                                                                                                             |
| B29C 39/44        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                                                                                                                                                                                                      |
| <b>B29C 41/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by coating a mould, core or other substrate, i.e. by depositing material and stripping-off the shaped article; Apparatus therefor (with compacting pressure B29C 43/00) [4]</b>                                                                                                        |
| B29C 41/02        | 1-Punkt Untergruppe | . for making articles of definite length, i.e. discrete articles [4]                                                                                                                                                                                                                              |
| B29C 41/04        | 2-Punkt Untergruppe | . . Rotational or centrifugal casting, i.e. coating the inside of a mould by rotating the mould [4]                                                                                                                                                                                               |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                     |
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| B29C 41/06        | 3-Punkt Untergruppe | . . . about two or more axes [4]                                                                                                                                                                                                                                          |
| B29C 41/08        | 2-Punkt Untergruppe | . . Coating a former, core or other substrate by spraying or fluidisation, e.g. spraying powder [4]                                                                                                                                                                       |
| B29C 41/10        | 3-Punkt Untergruppe | . . . by fluidisation [4]                                                                                                                                                                                                                                                 |
| B29C 41/12        | 2-Punkt Untergruppe | . . Spreading-out the material on a substrate [4]                                                                                                                                                                                                                         |
| B29C 41/14        | 2-Punkt Untergruppe | . . Dipping a core [4]                                                                                                                                                                                                                                                    |
| B29C 41/16        | 2-Punkt Untergruppe | . . Slip casting, i.e. applying a slip or slurry on a perforated or porous or absorbent surface with the liquid being drained away [4]                                                                                                                                    |
| B29C 41/18        | 2-Punkt Untergruppe | . . Slush casting, i.e. pouring moulding material into a hollow mould with excess material being poured off [4]                                                                                                                                                           |
| B29C 41/20        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. moulding around inserts or for coating articles [4]                                                                                                                                                                     |
| B29C 41/22        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                                                                                                                                                                     |
| B29C 41/24        | 1-Punkt Untergruppe | . for making articles of indefinite length [4]                                                                                                                                                                                                                            |
| B29C 41/26        | 2-Punkt Untergruppe | . . by depositing flowable material on a rotating drum [4]                                                                                                                                                                                                                |
| B29C 41/28        | 2-Punkt Untergruppe | . . by depositing flowable material on an endless belt [4]                                                                                                                                                                                                                |
| B29C 41/30        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. moulding around inserts or for coating articles [4]                                                                                                                                                                     |
| B29C 41/32        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                                                                                                                                                                     |
| B29C 41/34        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                                                                                                                                                                                       |
| B29C 41/36        | 2-Punkt Untergruppe | . . Feeding the material on to the mould, core or other substrate [4]                                                                                                                                                                                                     |
| B29C 41/38        | 2-Punkt Untergruppe | . . Moulds, cores or other substrates [4]                                                                                                                                                                                                                                 |
| B29C 41/40        | 3-Punkt Untergruppe | . . . Cores [4]                                                                                                                                                                                                                                                           |
| B29C 41/42        | 2-Punkt Untergruppe | . . Removing articles from moulds, cores or other substrates [4]                                                                                                                                                                                                          |
| B29C 41/44        | 3-Punkt Untergruppe | . . . Articles of indefinite length [4]                                                                                                                                                                                                                                   |
| B29C 41/46        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                                                                                                                                                                                |
| B29C 41/48        | 2-Punkt Untergruppe | . . Compensating volume change, e.g. retraction [4]                                                                                                                                                                                                                       |
| B29C 41/50        | 2-Punkt Untergruppe | . . Shaping under special conditions, e.g. vacuum [4]                                                                                                                                                                                                                     |
| B29C 41/52        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                                                                                                                                                                              |
| <b>B29C 43/00</b> | <b>Hauptgruppe</b>  | <b>Compression moulding, i.e. applying external pressure to flow the moulding material; Apparatus therefor (shaping or impregnating by compression composites comprising reinforcements other than fibres of short length B29C 70/40; presses in general B30B) [4, 6]</b> |
| B29C 43/02        | 1-Punkt Untergruppe | . of articles of definite length, i.e. discrete articles [4]                                                                                                                                                                                                              |
| B29C 43/04        | 2-Punkt Untergruppe | . . using movable moulds [4]                                                                                                                                                                                                                                              |
| B29C 43/06        | 3-Punkt Untergruppe | . . . continuously movable [4]                                                                                                                                                                                                                                            |
| B29C 43/08        | 4-Punkt Untergruppe | . . . . with circular movement [4]                                                                                                                                                                                                                                        |
| B29C 43/10        | 2-Punkt Untergruppe | . . Isostatic pressing, i.e. using non-rigid pressure-exerting members against rigid parts or dies [4]                                                                                                                                                                    |
| B29C 43/12        | 3-Punkt Untergruppe | . . . using bags surrounding the moulding material [4]                                                                                                                                                                                                                    |

| Symbol            | Typ                 | Titel                                                                                                                     |
|-------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------|
| B29C 43/14        | 2-Punkt Untergruppe | . . in several steps [4]                                                                                                  |
| B29C 43/16        | 2-Punkt Untergruppe | . . Forging [4]                                                                                                           |
| B29C 43/18        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. compression moulding around inserts or for coating articles [4]         |
| B29C 43/20        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                     |
| B29C 43/22        | 1-Punkt Untergruppe | . of articles of indefinite length [4]                                                                                    |
| B29C 43/24        | 2-Punkt Untergruppe | . . Calendering [4]                                                                                                       |
| B29C 43/26        | 2-Punkt Untergruppe | . . in several steps (B29C 43/30 takes precedence) [4]                                                                    |
| B29C 43/28        | 2-Punkt Untergruppe | . . incorporating preformed parts or layers, e.g. compression moulding around inserts or for coating articles [4]         |
| B29C 43/30        | 2-Punkt Untergruppe | . . Making multilayered or multicoloured articles [4]                                                                     |
| B29C 43/32        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                                       |
| B29C 43/34        | 2-Punkt Untergruppe | . . Feeding the material to the mould or the compression means [4]                                                        |
| B29C 43/36        | 2-Punkt Untergruppe | . . Moulds for making articles of definite length, i.e. discrete articles [4]                                             |
| B29C 43/38        | 3-Punkt Untergruppe | . . . with means to avoid flashes [4]                                                                                     |
| B29C 43/40        | 3-Punkt Untergruppe | . . . with means for cutting the article [4]                                                                              |
| B29C 43/42        | 3-Punkt Untergruppe | . . . for undercut articles [4]                                                                                           |
| B29C 43/44        | 2-Punkt Untergruppe | . . Compression means for making articles of indefinite length [4]                                                        |
| B29C 43/46        | 3-Punkt Untergruppe | . . . Rollers [4]                                                                                                         |
| B29C 43/48        | 3-Punkt Untergruppe | . . . Endless belts [4]                                                                                                   |
| B29C 43/50        | 2-Punkt Untergruppe | . . Removing moulded articles [4]                                                                                         |
| B29C 43/52        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                                |
| B29C 43/54        | 2-Punkt Untergruppe | . . Compensating volume change, e.g. retraction [4]                                                                       |
| B29C 43/56        | 2-Punkt Untergruppe | . . Compression moulding under special conditions, e.g. vacuum [4]                                                        |
| B29C 43/58        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                              |
| <b>B29C 44/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by internal pressure generated in the material, e.g. swelling, foaming [6]</b>                                 |
| B29C 44/02        | 1-Punkt Untergruppe | . for articles of definite length, i.e. discrete articles [6]                                                             |
| B29C 44/04        | 2-Punkt Untergruppe | . . consisting of at least two parts of chemically or physically different materials, e.g. having different densities [6] |
| B29C 44/06        | 3-Punkt Untergruppe | . . . Making multilayered articles [6]                                                                                    |
| B29C 44/08        | 2-Punkt Untergruppe | . . using several expanding steps [6]                                                                                     |
| B29C 44/10        | 2-Punkt Untergruppe | . . Applying counter-pressure during expanding [6]                                                                        |
| B29C 44/12        | 2-Punkt Untergruppe | . . Incorporating or moulding on preformed parts, e.g. inserts, reinforcements [6]                                        |
| B29C 44/14        | 3-Punkt Untergruppe | . . . the preformed part being a lining [6]                                                                               |

| Symbol            | Typ                 | Titel                                                                                                                                                                              |
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| B29C 44/16        | 4-Punkt Untergruppe | . . . . shaped by the expansion of the material [6]                                                                                                                                |
| B29C 44/18        | 3-Punkt Untergruppe | . . . Filling preformed cavities [6]                                                                                                                                               |
| B29C 44/20        | 1-Punkt Untergruppe | . for articles of indefinite length [6]                                                                                                                                            |
| B29C 44/22        | 2-Punkt Untergruppe | . . consisting of at least two parts of chemically or physically different materials, e.g. having different densities [6]                                                          |
| B29C 44/24        | 3-Punkt Untergruppe | . . . Making multilayered articles [6]                                                                                                                                             |
| B29C 44/26        | 2-Punkt Untergruppe | . . using several expanding steps [6]                                                                                                                                              |
| B29C 44/28        | 2-Punkt Untergruppe | . . Expanding the moulding material on continuous moving surfaces [6]                                                                                                              |
| B29C 44/30        | 2-Punkt Untergruppe | . . Expanding the moulding material between endless belts or rollers [6]                                                                                                           |
| B29C 44/32        | 2-Punkt Untergruppe | . . Incorporating or moulding on preformed parts, e.g. linings, inserts, reinforcements [6]                                                                                        |
| B29C 44/34        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [6]                                                                                                                |
| B29C 44/36        | 2-Punkt Untergruppe | . . Feeding the material to be shaped [6]                                                                                                                                          |
| B29C 44/38        | 3-Punkt Untergruppe | . . . into a closed space, i.e. to make articles of definite length [6]                                                                                                            |
| B29C 44/40        | 4-Punkt Untergruppe | . . . . by gravity, e.g. by casting [6]                                                                                                                                            |
| B29C 44/42        | 4-Punkt Untergruppe | . . . . using pressure difference, e.g. by injection, by vacuum [6]                                                                                                                |
| B29C 44/44        | 4-Punkt Untergruppe | . . . . in the form of expandable particles or beads [6]                                                                                                                           |
| B29C 44/46        | 3-Punkt Untergruppe | . . . into an open space or onto moving surfaces, i.e. to make articles of indefinite length [6]                                                                                   |
| B29C 44/48        | 4-Punkt Untergruppe | . . . . by gravity, e.g. casting onto, or between, moving surfaces [6]                                                                                                             |
| B29C 44/50        | 4-Punkt Untergruppe | . . . . using pressure difference, e.g. by extrusion, by spraying [6]                                                                                                              |
| B29C 44/52        | 5-Punkt Untergruppe | . . . . . between moving surfaces [6]                                                                                                                                              |
| B29C 44/54        | 4-Punkt Untergruppe | . . . . in the form of expandable particles or beads [6]                                                                                                                           |
| B29C 44/56        | 2-Punkt Untergruppe | . . After-treatment of articles, e.g. for altering the shape [6]                                                                                                                   |
| B29C 44/58        | 2-Punkt Untergruppe | . . Moulds [6]                                                                                                                                                                     |
| B29C 44/60        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [6]                                                                                                                                       |
| <b>B29C 45/00</b> | <b>Hauptgruppe</b>  | <b>Injection moulding, i.e. forcing the required volume of moulding material through a nozzle into a closed mould; Apparatus therefor (injection blow-moulding B29C 49/06) [4]</b> |
| B29C 45/02        | 1-Punkt Untergruppe | . Transfer moulding, i.e. transferring the required volume of moulding material by a plunger from a "shot" cavity into a mould cavity [4]                                          |
| B29C 45/03        | 1-Punkt Untergruppe | . Injection moulding apparatus (transfer moulding B29C 45/02) [4]                                                                                                                  |
| B29C 45/04        | 2-Punkt Untergruppe | . . using movable moulds (B29C 45/08 takes precedence) [4]                                                                                                                         |
| B29C 45/06        | 3-Punkt Untergruppe | . . . on a turntable [4]                                                                                                                                                           |
| B29C 45/07        | 2-Punkt Untergruppe | . . using movable injection units [4]                                                                                                                                              |
| B29C 45/08        | 3-Punkt Untergruppe | . . . moving with the mould during the injection operation [4]                                                                                                                     |
| B29C 45/10        | 2-Punkt Untergruppe | . . using moulds or injection units usable in different arrangements or combinations to each other [4]                                                                             |

| Symbol     | Typ                 | Titel                                                                                                         |
|------------|---------------------|---------------------------------------------------------------------------------------------------------------|
| B29C 45/12 | 2-Punkt Untergruppe | . . using two or more fixed moulds, e.g. in tandem [4]                                                        |
| B29C 45/13 | 2-Punkt Untergruppe | . . using two or more injection units co-operating with a single mould [4]                                    |
| B29C 45/14 | 1-Punkt Untergruppe | . incorporating preformed parts or layers, e.g. injection moulding around inserts or for coating articles [4] |
| B29C 45/16 | 1-Punkt Untergruppe | . Making multilayered or multicoloured articles [4]                                                           |
| B29C 45/17 | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                           |
| B29C 45/18 | 2-Punkt Untergruppe | . . Feeding the material into the injection moulding apparatus [4]                                            |
| B29C 45/20 | 2-Punkt Untergruppe | . . Injection nozzles [4]                                                                                     |
| B29C 45/22 | 3-Punkt Untergruppe | . . . Multiple nozzle systems [4]                                                                             |
| B29C 45/23 | 3-Punkt Untergruppe | . . . Feed stopping equipment [4]                                                                             |
| B29C 45/24 | 3-Punkt Untergruppe | . . . Cleaning equipment [4]                                                                                  |
| B29C 45/26 | 2-Punkt Untergruppe | . . Moulds [4]                                                                                                |
| B29C 45/27 | 3-Punkt Untergruppe | . . . Sprue channels [4]                                                                                      |
| B29C 45/28 | 4-Punkt Untergruppe | . . . . Closure devices therefor [4]                                                                          |
| B29C 45/30 | 4-Punkt Untergruppe | . . . . Flow control means disposed within the sprue channel, e.g. "torpedo" construction [4]                 |
| B29C 45/32 | 3-Punkt Untergruppe | . . . having several axially spaced mould cavities [4]                                                        |
| B29C 45/33 | 3-Punkt Untergruppe | . . . having transversely, e.g. radially, movable mould parts [4]                                             |
| B29C 45/34 | 3-Punkt Untergruppe | . . . having venting means [4]                                                                                |
| B29C 45/36 | 3-Punkt Untergruppe | . . . having means for locating or centering cores [4]                                                        |
| B29C 45/37 | 3-Punkt Untergruppe | . . . Mould cavity walls [4]                                                                                  |
| B29C 45/38 | 2-Punkt Untergruppe | . . Cutting-off equipment for sprues or ingates [4]                                                           |
| B29C 45/40 | 2-Punkt Untergruppe | . . Removing or ejecting moulded articles [4]                                                                 |
| B29C 45/42 | 3-Punkt Untergruppe | . . . using means movable from outside the mould between mould parts [4]                                      |
| B29C 45/43 | 3-Punkt Untergruppe | . . . using fluid under pressure [4]                                                                          |
| B29C 45/44 | 3-Punkt Untergruppe | . . . for undercut articles [4]                                                                               |
| B29C 45/46 | 2-Punkt Untergruppe | . . Means for plasticising or homogenising the moulding material or forcing it into the mould [4]             |
| B29C 45/47 | 3-Punkt Untergruppe | . . . using screws (B29C 45/54 takes precedence) [4]                                                          |
| B29C 45/48 | 4-Punkt Untergruppe | . . . . Plasticising screw and injection screw [4]                                                            |
| B29C 45/50 | 4-Punkt Untergruppe | . . . . Axially movable screw [4]                                                                             |
| B29C 45/52 | 5-Punkt Untergruppe | . . . . . Non-return devices [4]                                                                              |
| B29C 45/53 | 3-Punkt Untergruppe | . . . using injection ram or piston [4]                                                                       |
| B29C 45/54 | 4-Punkt Untergruppe | . . . . and plasticising screw [4]                                                                            |
| B29C 45/56 | 3-Punkt Untergruppe | . . . using mould parts movable during or after injection, e.g. injection-compression moulding [4]            |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                         |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 45/57        | 3-Punkt Untergruppe | . . . Exerting after-pressure on the moulding material [4]                                                                                                                                                                    |
| B29C 45/58        | 3-Punkt Untergruppe | . . . Details [4]                                                                                                                                                                                                             |
| B29C 45/60        | 4-Punkt Untergruppe | . . . . Screws [4]                                                                                                                                                                                                            |
| B29C 45/62        | 4-Punkt Untergruppe | . . . . Barrels or cylinders [4]                                                                                                                                                                                              |
| B29C 45/63        | 4-Punkt Untergruppe | . . . . Venting or degassing means [4]                                                                                                                                                                                        |
| B29C 45/64        | 2-Punkt Untergruppe | . . Mould opening, closing or clamping devices [4]                                                                                                                                                                            |
| B29C 45/66        | 3-Punkt Untergruppe | . . . mechanical [4]                                                                                                                                                                                                          |
| B29C 45/67        | 3-Punkt Untergruppe | . . . hydraulic [4]                                                                                                                                                                                                           |
| B29C 45/68        | 3-Punkt Untergruppe | . . . hydro-mechanical [4]                                                                                                                                                                                                    |
| B29C 45/70        | 2-Punkt Untergruppe | . . Means for plasticising or homogenising the moulding material or forcing it into the mould, combined with mould opening, closing or clamping devices [4]                                                                   |
| B29C 45/72        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                                                                                                                                    |
| B29C 45/73        | 3-Punkt Untergruppe | . . . of the mould [4]                                                                                                                                                                                                        |
| B29C 45/74        | 3-Punkt Untergruppe | . . . of the injection unit [4]                                                                                                                                                                                               |
| B29C 45/76        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                                                                                                                                  |
| B29C 45/77        | 3-Punkt Untergruppe | . . . of velocity or pressure of moulding material [4]                                                                                                                                                                        |
| B29C 45/78        | 3-Punkt Untergruppe | . . . of temperature [4]                                                                                                                                                                                                      |
| B29C 45/80        | 3-Punkt Untergruppe | . . . of relative position of mould parts [4]                                                                                                                                                                                 |
| B29C 45/82        | 3-Punkt Untergruppe | . . . Hydraulic circuits [4]                                                                                                                                                                                                  |
| B29C 45/83        | 2-Punkt Untergruppe | . . Lubricating means [4]                                                                                                                                                                                                     |
| B29C 45/84        | 2-Punkt Untergruppe | . . Safety devices [4]                                                                                                                                                                                                        |
| <b>B29C 47/00</b> | <b>Hauptgruppe</b>  | <b>Extrusion moulding, i.e. expressing the moulding material through a die or nozzle which imparts the desired form; Apparatus therefor (extrusion blow-moulding B29C 49/04; extrusion presses in general B30B 11/22) [4]</b> |
| B29C 47/02        | 1-Punkt Untergruppe | . incorporating preformed parts or layers, e.g. extrusion moulding around inserts or for coating articles [4]                                                                                                                 |
| B29C 47/04        | 1-Punkt Untergruppe | . of multilayered or multicoloured articles [4]                                                                                                                                                                               |
| B29C 47/06        | 2-Punkt Untergruppe | . . Multilayered articles [4]                                                                                                                                                                                                 |
| B29C 47/08        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                                                                                                                                           |
| B29C 47/10        | 2-Punkt Untergruppe | . . Feeding the material to the extruder [4]                                                                                                                                                                                  |
| B29C 47/12        | 2-Punkt Untergruppe | . . Extrusion nozzles or dies [4]                                                                                                                                                                                             |
| B29C 47/14        | 3-Punkt Untergruppe | . . . with broad opening, e.g. for sheets [4]                                                                                                                                                                                 |
| B29C 47/16        | 4-Punkt Untergruppe | . . . . adjustable [4]                                                                                                                                                                                                        |
| B29C 47/18        | 4-Punkt Untergruppe | . . . . with die parts oscillating relative to each other [4]                                                                                                                                                                 |
| B29C 47/20        | 3-Punkt Untergruppe | . . . with annular opening, e.g. for tubular articles [4]                                                                                                                                                                     |



| Symbol     | Typ                 | Titel                                                                                                        |
|------------|---------------------|--------------------------------------------------------------------------------------------------------------|
| B29C 47/22 | 4-Punkt Untergruppe | . . . . adjustable [4]                                                                                       |
| B29C 47/24 | 4-Punkt Untergruppe | . . . . with die parts rotatable relative to each other [4]                                                  |
| B29C 47/26 | 4-Punkt Untergruppe | . . . . Multiple annular extrusion nozzles [4]                                                               |
| B29C 47/28 | 4-Punkt Untergruppe | . . . . Cross-head annular extrusion nozzles [4]                                                             |
| B29C 47/30 | 3-Punkt Untergruppe | . . . Multi-port extrusion nozzles [4]                                                                       |
| B29C 47/32 | 3-Punkt Untergruppe | . . . Roller-extrusion nozzles [4]                                                                           |
| B29C 47/34 | 2-Punkt Untergruppe | . . Conveyers for extruded material [4]                                                                      |
| B29C 47/36 | 2-Punkt Untergruppe | . . Means for plasticising or homogenising the moulding material or forcing it through the nozzle or die [4] |
| B29C 47/38 | 3-Punkt Untergruppe | . . . using screws [4]                                                                                       |
| B29C 47/40 | 4-Punkt Untergruppe | . . . . using at least two intermeshing screws [4]                                                           |
| B29C 47/42 | 5-Punkt Untergruppe | . . . . . using sub-screws, e.g. planetary screws [4]                                                        |
| B29C 47/44 | 4-Punkt Untergruppe | . . . . using axially movable screws [4]                                                                     |
| B29C 47/46 | 4-Punkt Untergruppe | . . . . using screws extruding in opposite directions [4]                                                    |
| B29C 47/48 | 4-Punkt Untergruppe | . . . . using screws arranged coaxially, one within the other [4]                                            |
| B29C 47/50 | 4-Punkt Untergruppe | . . . . using at least two screws, one after the other, e.g. multi-stage plasticisers [4]                    |
| B29C 47/52 | 3-Punkt Untergruppe | . . . using rollers or discs [4]                                                                             |
| B29C 47/54 | 3-Punkt Untergruppe | . . . using press rams or pistons [4]                                                                        |
| B29C 47/56 | 3-Punkt Untergruppe | . . . using more than one extruder to feed one die [4]                                                       |
| B29C 47/58 | 3-Punkt Untergruppe | . . . Details [4]                                                                                            |
| B29C 47/60 | 4-Punkt Untergruppe | . . . . Screws [4]                                                                                           |
| B29C 47/62 | 5-Punkt Untergruppe | . . . . . having more than one screw-thread [4]                                                              |
| B29C 47/64 | 5-Punkt Untergruppe | . . . . . having incorporated mixing devices [4]                                                             |
| B29C 47/66 | 4-Punkt Untergruppe | . . . . Barrels or cylinders [4]                                                                             |
| B29C 47/68 | 4-Punkt Untergruppe | . . . . Filters [4]                                                                                          |
| B29C 47/70 | 4-Punkt Untergruppe | . . . . Flow dividers [4]                                                                                    |
| B29C 47/72 | 4-Punkt Untergruppe | . . . . Feedback means [4]                                                                                   |
| B29C 47/74 | 4-Punkt Untergruppe | . . . . By-pass means [4]                                                                                    |
| B29C 47/76 | 4-Punkt Untergruppe | . . . . Venting or degassing means [4]                                                                       |
| B29C 47/78 | 2-Punkt Untergruppe | . . Heating or cooling the material to be extruded or the stream of extruded material [4]                    |
| B29C 47/80 | 3-Punkt Untergruppe | . . . at plasticising zone [4]                                                                               |
| B29C 47/82 | 4-Punkt Untergruppe | . . . . Heating the cylinders [4]                                                                            |
| B29C 47/84 | 4-Punkt Untergruppe | . . . . Heating the screws [4]                                                                               |

| Symbol            | Typ                 | Titel                                                                                                             |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------|
| B29C 47/86        | 3-Punkt Untergruppe | . . . at nozzle zone [4]                                                                                          |
| B29C 47/88        | 3-Punkt Untergruppe | . . . Heating or cooling the stream of extruded material [4]                                                      |
| B29C 47/90        | 4-Punkt Untergruppe | . . . . with calibration or sizing [4]                                                                            |
| B29C 47/92        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                      |
| B29C 47/94        | 2-Punkt Untergruppe | . . Lubricating [4]                                                                                               |
| B29C 47/96        | 2-Punkt Untergruppe | . . Safety devices [4]                                                                                            |
| <b>B29C 49/00</b> | <b>Hauptgruppe</b>  | <b>Blow-moulding, i.e. blowing a preform or parison to a desired shape within a mould; Apparatus therefor [4]</b> |
| B29C 49/02        | 1-Punkt Untergruppe | . Combined blow-moulding and manufacture of the preform or the parison [4]                                        |
| B29C 49/04        | 2-Punkt Untergruppe | . . Extrusion blow-moulding [4]                                                                                   |
| B29C 49/06        | 2-Punkt Untergruppe | . . Injection blow-moulding [4]                                                                                   |
| B29C 49/08        | 1-Punkt Untergruppe | . Biaxial stretching during blow-moulding [4]                                                                     |
| B29C 49/10        | 2-Punkt Untergruppe | . . using mechanical means [4]                                                                                    |
| B29C 49/12        | 3-Punkt Untergruppe | . . . Stretching rods [4]                                                                                         |
| B29C 49/14        | 3-Punkt Untergruppe | . . . Clamps [4]                                                                                                  |
| B29C 49/16        | 2-Punkt Untergruppe | . . using pressure difference, e.g. pre-blowing [4]                                                               |
| B29C 49/18        | 1-Punkt Untergruppe | . using several blowing steps (B29C 49/16 takes precedence) [4]                                                   |
| B29C 49/20        | 1-Punkt Untergruppe | . of articles having inserts or reinforcements [4]                                                                |
| B29C 49/22        | 1-Punkt Untergruppe | . using multilayered preforms or parisons [4]                                                                     |
| B29C 49/24        | 1-Punkt Untergruppe | . Lining or labelling [4]                                                                                         |
| B29C 49/26        | 2-Punkt Untergruppe | . . inner lining of tubes [4]                                                                                     |
| B29C 49/28        | 1-Punkt Untergruppe | . Blow-moulding apparatus [4]                                                                                     |
| B29C 49/30        | 2-Punkt Untergruppe | . . having movable moulds or mould parts [4]                                                                      |
| B29C 49/32        | 3-Punkt Untergruppe | . . . moving "to and fro" [4]                                                                                     |
| B29C 49/34        | 4-Punkt Untergruppe | . . . . the mould parts moving "hand-over-hand" [4]                                                               |
| B29C 49/36        | 3-Punkt Untergruppe | . . . rotatable about one axis [4]                                                                                |
| B29C 49/38        | 3-Punkt Untergruppe | . . . mounted on movable endless supports [4]                                                                     |
| B29C 49/40        | 4-Punkt Untergruppe | . . . . on co-operating drums [4]                                                                                 |
| B29C 49/42        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                               |
| B29C 49/44        | 2-Punkt Untergruppe | . . for applying pressure through the walls of an inflated bag [4]                                                |
| B29C 49/46        | 2-Punkt Untergruppe | . . characterised by using particular environment or blow fluids other than air [4]                               |
| B29C 49/48        | 2-Punkt Untergruppe | . . Moulds [4]                                                                                                    |
| B29C 49/50        | 3-Punkt Untergruppe | . . . having cutting or deflashing means [4]                                                                      |

| Symbol            | Typ                 | Titel                                                                                                             |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------|
| B29C 49/52        | 3-Punkt Untergruppe | . . . having decorating or printing means [4]                                                                     |
| B29C 49/54        | 3-Punkt Untergruppe | . . . for undercut articles [4]                                                                                   |
| B29C 49/56        | 2-Punkt Untergruppe | . . Opening, closing or clamping means [4]                                                                        |
| B29C 49/58        | 2-Punkt Untergruppe | . . Blowing means [4]                                                                                             |
| B29C 49/60        | 3-Punkt Untergruppe | . . . Blow-needles [4]                                                                                            |
| B29C 49/62        | 2-Punkt Untergruppe | . . Venting means [4]                                                                                             |
| B29C 49/64        | 2-Punkt Untergruppe | . . Heating or cooling preforms, parisons or blown articles [4]                                                   |
| B29C 49/66        | 3-Punkt Untergruppe | . . . Cooling by refrigerant introduced into the blown article [4]                                                |
| B29C 49/68        | 3-Punkt Untergruppe | . . . Ovens specially adapted for heating preforms or parisons [4]                                                |
| B29C 49/70        | 2-Punkt Untergruppe | . . Removing or ejecting blown articles from the mould [4]                                                        |
| B29C 49/72        | 2-Punkt Untergruppe | . . Deflashing outside the mould [4]                                                                              |
| B29C 49/74        | 3-Punkt Untergruppe | . . . Deflashing the neck portion [4]                                                                             |
| B29C 49/76        | 2-Punkt Untergruppe | . . Neck calibration [4]                                                                                          |
| B29C 49/78        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                      |
| B29C 49/80        | 3-Punkt Untergruppe | . . . Testing, e.g. for leaks [4]                                                                                 |
| <b>B29C 51/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by thermoforming, e.g. shaping sheets in matched moulds or by deep-drawing; Apparatus therefor [4]</b> |
| B29C 51/02        | 1-Punkt Untergruppe | . Combined thermoforming and manufacture of the preform [4]                                                       |
| B29C 51/04        | 1-Punkt Untergruppe | . Combined thermoforming and prestretching, e.g. biaxial stretching [4]                                           |
| B29C 51/06        | 2-Punkt Untergruppe | . . using pressure difference [4]                                                                                 |
| B29C 51/08        | 1-Punkt Untergruppe | . Deep-drawing or matched-mould forming, i.e. using mechanical means only [4]                                     |
| B29C 51/10        | 1-Punkt Untergruppe | . Forming by pressure difference, e.g. vacuum [4]                                                                 |
| B29C 51/12        | 1-Punkt Untergruppe | . of articles having inserts or reinforcements [4]                                                                |
| B29C 51/14        | 1-Punkt Untergruppe | . using multilayered preforms or sheets [4]                                                                       |
| B29C 51/16        | 1-Punkt Untergruppe | . Lining or labelling [4]                                                                                         |
| B29C 51/18        | 1-Punkt Untergruppe | . Thermoforming apparatus [4]                                                                                     |
| B29C 51/20        | 2-Punkt Untergruppe | . . having movable moulds or mould parts [4]                                                                      |
| B29C 51/22        | 3-Punkt Untergruppe | . . . rotatable about an axis [4]                                                                                 |
| B29C 51/24        | 3-Punkt Untergruppe | . . . mounted on movable endless supports [4]                                                                     |
| B29C 51/26        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                               |
| B29C 51/28        | 2-Punkt Untergruppe | . . for applying pressure through the wall of an inflated bag or diaphragm [4]                                    |
| B29C 51/30        | 2-Punkt Untergruppe | . . Moulds [4]                                                                                                    |
| B29C 51/32        | 3-Punkt Untergruppe | . . . having cutting means [4]                                                                                    |

| Symbol            | Typ                 | Titel                                                                                                                           |
|-------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| B29C 51/34        | 3-Punkt Untergruppe | . . . for undercut articles [4]                                                                                                 |
| B29C 51/36        | 3-Punkt Untergruppe | . . . specially adapted for vacuum forming [4]                                                                                  |
| B29C 51/38        | 3-Punkt Untergruppe | . . . Opening, closing or clamping means [4]                                                                                    |
| B29C 51/40        | 3-Punkt Untergruppe | . . . Venting means [4]                                                                                                         |
| B29C 51/42        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                                      |
| B29C 51/44        | 2-Punkt Untergruppe | . . Removing or ejecting moulded articles [4]                                                                                   |
| B29C 51/46        | 2-Punkt Untergruppe | . . Measuring, controlling or regulating [4]                                                                                    |
| <b>B29C 53/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by bending, folding, twisting, straightening or flattening; Apparatus therefor (B29C 61/10 takes precedence) [4]</b> |
| B29C 53/02        | 1-Punkt Untergruppe | . Bending or folding (B29C 53/22, B29C 53/34, B29C 53/36, B29C 53/56 take precedence) [4]                                       |
| B29C 53/04        | 2-Punkt Untergruppe | . . of plates or sheets [4]                                                                                                     |
| B29C 53/06        | 3-Punkt Untergruppe | . . . Forming folding lines by pressing or scoring [4]                                                                          |
| B29C 53/08        | 2-Punkt Untergruppe | . . of tubes [4]                                                                                                                |
| B29C 53/10        | 2-Punkt Untergruppe | . . of blown tubular films, e.g. gusseting [4]                                                                                  |
| B29C 53/12        | 2-Punkt Untergruppe | . . helically, e.g. for making springs [4]                                                                                      |
| B29C 53/14        | 1-Punkt Untergruppe | . Twisting [4]                                                                                                                  |
| B29C 53/16        | 1-Punkt Untergruppe | . Straightening or flattening [4]                                                                                               |
| B29C 53/18        | 2-Punkt Untergruppe | . . of plates or sheets [4]                                                                                                     |
| B29C 53/20        | 2-Punkt Untergruppe | . . of tubes [4]                                                                                                                |
| B29C 53/22        | 1-Punkt Untergruppe | . Corrugating [4]                                                                                                               |
| B29C 53/24        | 2-Punkt Untergruppe | . . of plates or sheets [4]                                                                                                     |
| B29C 53/26        | 3-Punkt Untergruppe | . . . parallel with direction of feed [4]                                                                                       |
| B29C 53/28        | 3-Punkt Untergruppe | . . . transverse to direction of feed [4]                                                                                       |
| B29C 53/30        | 2-Punkt Untergruppe | . . of tubes (by blow-moulding B29C 49/00) [4]                                                                                  |
| B29C 53/32        | 1-Punkt Untergruppe | . Coiling (B29C 53/56 takes precedence) [4]                                                                                     |
| B29C 53/34        | 1-Punkt Untergruppe | . Rim rolling (of tube ends B29C 57/12) [4]                                                                                     |
| B29C 53/36        | 1-Punkt Untergruppe | . Bending and joining, e.g. for making hollow articles (B29C 53/56 takes precedence; from paper B31C) [4]                       |
| B29C 53/38        | 2-Punkt Untergruppe | . . by bending sheets or strips at right angles to the longitudinal axis of the article being formed and joining the edges [4]  |
| B29C 53/40        | 3-Punkt Untergruppe | . . . for articles of definite length, i.e. discrete articles [4]                                                               |
| B29C 53/42        | 4-Punkt Untergruppe | . . . . using internal forming surfaces, e.g. mandrels [4]                                                                      |
| B29C 53/44        | 5-Punkt Untergruppe | . . . . . rotatable about the axis of the article [4]                                                                           |
| B29C 53/46        | 4-Punkt Untergruppe | . . . . using external forming surfaces, e.g. sleeves [4]                                                                       |

| Symbol            | Typ                 | Titel                                                                                                           |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------|
| B29C 53/48        | 3-Punkt Untergruppe | . . . for articles of indefinite length, i.e. bending a strip progressively [4]                                 |
| B29C 53/50        | 4-Punkt Untergruppe | . . . . using internal forming surfaces, e.g. mandrels [4]                                                      |
| B29C 53/52        | 4-Punkt Untergruppe | . . . . using external forming surfaces, e.g. sleeves [4]                                                       |
| B29C 53/54        | 4-Punkt Untergruppe | . . . . Guiding, aligning or shaping edges [4]                                                                  |
| B29C 53/56        | 1-Punkt Untergruppe | . Winding and joining, e.g. winding spirally [4]                                                                |
| B29C 53/58        | 2-Punkt Untergruppe | . . helically [4]                                                                                               |
| B29C 53/60        | 3-Punkt Untergruppe | . . . using internal forming surfaces, e.g. mandrels [4]                                                        |
| B29C 53/62        | 4-Punkt Untergruppe | . . . . rotatable about the winding axis [4]                                                                    |
| B29C 53/64        | 5-Punkt Untergruppe | . . . . . and moving axially [4]                                                                                |
| B29C 53/66        | 5-Punkt Untergruppe | . . . . . with axially movable winding feed member [4]                                                          |
| B29C 53/68        | 4-Punkt Untergruppe | . . . . with rotatable winding feed member [4]                                                                  |
| B29C 53/70        | 5-Punkt Untergruppe | . . . . . and moving axially [4]                                                                                |
| B29C 53/72        | 3-Punkt Untergruppe | . . . using external forming surfaces [4]                                                                       |
| B29C 53/74        | 3-Punkt Untergruppe | . . . using a forming surface in the shape of an endless belt which is recycled after the forming operation [4] |
| B29C 53/76        | 3-Punkt Untergruppe | . . . about more than one axis [4]                                                                              |
| B29C 53/78        | 3-Punkt Untergruppe | . . . using profiled sheets or strips [4]                                                                       |
| B29C 53/80        | 1-Punkt Untergruppe | . Component parts, details or accessories; Auxiliary operations [4]                                             |
| B29C 53/82        | 2-Punkt Untergruppe | . . Cores or mandrels [4]                                                                                       |
| B29C 53/84        | 2-Punkt Untergruppe | . . Heating or cooling [4]                                                                                      |
| <b>B29C 55/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by stretching, e.g. drawing through a die; Apparatus therefor (B29C 61/08 takes precedence) [4]</b>  |
| B29C 55/02        | 1-Punkt Untergruppe | . of plates or sheets [4]                                                                                       |
| B29C 55/04        | 2-Punkt Untergruppe | . . uniaxial, e.g. oblique [4]                                                                                  |
| B29C 55/06        | 3-Punkt Untergruppe | . . . parallel with the direction of feed [4]                                                                   |
| B29C 55/08        | 3-Punkt Untergruppe | . . . transverse to the direction of feed [4]                                                                   |
| B29C 55/10        | 2-Punkt Untergruppe | . . multiaxial [4]                                                                                              |
| B29C 55/12        | 3-Punkt Untergruppe | . . . biaxial [4]                                                                                               |
| B29C 55/14        | 4-Punkt Untergruppe | . . . . successively [4]                                                                                        |
| B29C 55/16        | 4-Punkt Untergruppe | . . . . simultaneously [4]                                                                                      |
| B29C 55/18        | 2-Punkt Untergruppe | . . by squeezing between surfaces, e.g. rollers [4]                                                             |
| B29C 55/20        | 2-Punkt Untergruppe | . . Edge clamps [4]                                                                                             |
| B29C 55/22        | 1-Punkt Untergruppe | . of tubes [4]                                                                                                  |
| B29C 55/24        | 2-Punkt Untergruppe | . . radial [4]                                                                                                  |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                        |
|-------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 55/26        | 2-Punkt Untergruppe | . . biaxial [4]                                                                                                                                                                                                              |
| B29C 55/28        | 1-Punkt Untergruppe | . of blown tubular films, e.g. by inflation [4]                                                                                                                                                                              |
| B29C 55/30        | 1-Punkt Untergruppe | . Drawing through a die [4]                                                                                                                                                                                                  |
| <b>B29C 57/00</b> | <b>Hauptgruppe</b>  | <b>Shaping of tube ends, e.g. flanging, beelling, closing; Apparatus therefor [4]</b>                                                                                                                                        |
| B29C 57/02        | 1-Punkt Untergruppe | . Belling or enlarging, e.g. combined with forming a groove [4]                                                                                                                                                              |
| B29C 57/04        | 2-Punkt Untergruppe | . . using mechanical means [4]                                                                                                                                                                                               |
| B29C 57/06        | 3-Punkt Untergruppe | . . . elastically deformable [4]                                                                                                                                                                                             |
| B29C 57/08        | 2-Punkt Untergruppe | . . using pressure difference [4]                                                                                                                                                                                            |
| B29C 57/10        | 1-Punkt Untergruppe | . Closing [4]                                                                                                                                                                                                                |
| B29C 57/12        | 1-Punkt Untergruppe | . Rim rolling [4]                                                                                                                                                                                                            |
| <b>B29C 59/00</b> | <b>Hauptgruppe</b>  | <b>Surface shaping, e.g. embossing; Apparatus therefor [4]</b>                                                                                                                                                               |
| B29C 59/02        | 1-Punkt Untergruppe | . by mechanical means, e.g. pressing [4]                                                                                                                                                                                     |
| B29C 59/04        | 2-Punkt Untergruppe | . . using rollers or endless belts [4]                                                                                                                                                                                       |
| B29C 59/06        | 2-Punkt Untergruppe | . . using vacuum drums [4]                                                                                                                                                                                                   |
| B29C 59/08        | 1-Punkt Untergruppe | . by flame treatment [4]                                                                                                                                                                                                     |
| B29C 59/10        | 1-Punkt Untergruppe | . by electric discharge treatment (electrodes H01T) [4]                                                                                                                                                                      |
| B29C 59/12        | 2-Punkt Untergruppe | . . in an environment other than air [4]                                                                                                                                                                                     |
| B29C 59/14        | 1-Punkt Untergruppe | . by plasma treatment (in general H05H) [4]                                                                                                                                                                                  |
| B29C 59/16        | 1-Punkt Untergruppe | . by wave energy or particle radiation [4]                                                                                                                                                                                   |
| B29C 59/18        | 1-Punkt Untergruppe | . by liberation of internal stresses, e.g. plastic memory [4]                                                                                                                                                                |
| <b>B29C 61/00</b> | <b>Hauptgruppe</b>  | <b>Shaping by liberation of internal stresses; Making preforms having internal stresses; Apparatus therefor (for surface shaping B29C 59/18; for lining articles B29C 63/38; for joining preformed parts B29C 65/66) [4]</b> |
| B29C 61/02        | 1-Punkt Untergruppe | . Thermal shrinking [4]                                                                                                                                                                                                      |
| B29C 61/04        | 1-Punkt Untergruppe | . Thermal expansion [4]                                                                                                                                                                                                      |
| B29C 61/06        | 1-Punkt Untergruppe | . Making preforms having internal stresses, e.g. plastic memory [4]                                                                                                                                                          |
| B29C 61/08        | 2-Punkt Untergruppe | . . by stretching tubes [4]                                                                                                                                                                                                  |
| B29C 61/10        | 2-Punkt Untergruppe | . . by bending plates or sheets [4]                                                                                                                                                                                          |
| <b>B29C 63/00</b> | <b>Hauptgruppe</b>  | <b>Lining or sheathing, i.e. applying preformed layers or sheathings of plastics; Apparatus therefor (B29C 73/00 takes precedence; by blowing B29C 49/00; by thermoforming B29C 51/00) [4, 5]</b>                            |
| B29C 63/02        | 1-Punkt Untergruppe | . using sheet or web-like material (B29C 63/26 takes precedence) [4]                                                                                                                                                         |
| B29C 63/04        | 2-Punkt Untergruppe | . . by folding, winding, bending or the like [4]                                                                                                                                                                             |
| B29C 63/06        | 3-Punkt Untergruppe | . . . around tubular articles [4]                                                                                                                                                                                            |
| B29C 63/08        | 3-Punkt Untergruppe | . . . by winding helically [4]                                                                                                                                                                                               |
| B29C 63/10        | 4-Punkt Untergruppe | . . . . around tubular articles [4]                                                                                                                                                                                          |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                 |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 63/12        | 3-Punkt Untergruppe | . . . by winding spirally [4]                                                                                                                                                                                                                                         |
| B29C 63/14        | 4-Punkt Untergruppe | . . . . around tubular articles [4]                                                                                                                                                                                                                                   |
| B29C 63/16        | 2-Punkt Untergruppe | . . applied by "rubber" bag or diaphragm [4]                                                                                                                                                                                                                          |
| B29C 63/18        | 1-Punkt Untergruppe | . using tubular layers or sheathings (B29C 63/26 takes precedence) [4]                                                                                                                                                                                                |
| B29C 63/20        | 2-Punkt Untergruppe | . . using pressure difference, e.g. vacuum [4]                                                                                                                                                                                                                        |
| B29C 63/22        | 1-Punkt Untergruppe | . using layers or sheathings having a shape adapted to the shape of the article (B29C 63/26 takes precedence) [4]                                                                                                                                                     |
| B29C 63/24        | 1-Punkt Untergruppe | . using threads [4]                                                                                                                                                                                                                                                   |
| B29C 63/26        | 1-Punkt Untergruppe | . Lining or sheathing of internal surfaces (B29C 63/38 takes precedence) [4]                                                                                                                                                                                          |
| B29C 63/28        | 2-Punkt Untergruppe | . . applied by "rubber" bag or diaphragm [4]                                                                                                                                                                                                                          |
| B29C 63/30        | 2-Punkt Untergruppe | . . using sheet or web-like material [4]                                                                                                                                                                                                                              |
| B29C 63/32        | 3-Punkt Untergruppe | . . . by winding helically [4]                                                                                                                                                                                                                                        |
| B29C 63/34        | 2-Punkt Untergruppe | . . using tubular layer or sheathings [4]                                                                                                                                                                                                                             |
| B29C 63/36        | 3-Punkt Untergruppe | . . . being turned inside out [4]                                                                                                                                                                                                                                     |
| B29C 63/38        | 1-Punkt Untergruppe | . by liberation of internal stresses [4]                                                                                                                                                                                                                              |
| B29C 63/40        | 2-Punkt Untergruppe | . . using sheet or web-like material [4]                                                                                                                                                                                                                              |
| B29C 63/42        | 2-Punkt Untergruppe | . . using tubular layers or sheathings [4]                                                                                                                                                                                                                            |
| B29C 63/44        | 2-Punkt Untergruppe | . . the shape of the layers or sheathings being adapted to the shape of the articles [4]                                                                                                                                                                              |
| B29C 63/46        | 2-Punkt Untergruppe | . . of internal surfaces [4]                                                                                                                                                                                                                                          |
| B29C 63/48        | 1-Punkt Untergruppe | . Preparation of the surfaces [4]                                                                                                                                                                                                                                     |
| <b>B29C 65/00</b> | <b>Hauptgruppe</b>  | <b>Joining of preformed parts; Apparatus therefor (for making boxes, cartons, envelopes or bags B31B; for sealing or securing package folds or closures B65B 51/00; joining constructional elements, in general F16B; splicing of light guides G02B 6/255) [4, 5]</b> |
| B29C 65/02        | 1-Punkt Untergruppe | . by heating, with or without pressure [4]                                                                                                                                                                                                                            |
| B29C 65/04        | 2-Punkt Untergruppe | . . Dielectric heating, e.g. high-frequency welding [4]                                                                                                                                                                                                               |
| B29C 65/06        | 2-Punkt Untergruppe | . . using friction, e.g. spin welding [4]                                                                                                                                                                                                                             |
| B29C 65/08        | 2-Punkt Untergruppe | . . using ultrasonic vibrations [4]                                                                                                                                                                                                                                   |
| B29C 65/10        | 2-Punkt Untergruppe | . . using hot gases [4]                                                                                                                                                                                                                                               |
| B29C 65/12        | 3-Punkt Untergruppe | . . . and welding bar [4]                                                                                                                                                                                                                                             |
| B29C 65/14        | 2-Punkt Untergruppe | . . using wave energy or particle radiation [4]                                                                                                                                                                                                                       |
| B29C 65/16        | 3-Punkt Untergruppe | . . . Laser beam [4]                                                                                                                                                                                                                                                  |
| B29C 65/18        | 2-Punkt Untergruppe | . . using heated tool [4]                                                                                                                                                                                                                                             |
| B29C 65/20        | 3-Punkt Untergruppe | . . . with direct contact, e.g. using "mirror" [4]                                                                                                                                                                                                                    |
| B29C 65/22        | 3-Punkt Untergruppe | . . . Heated wire [4]                                                                                                                                                                                                                                                 |

| Symbol            | Typ                 | Titel                                                                                                                                     |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 65/24        | 3-Punkt Untergruppe | . . . characterised by the means for heating the tool [4]                                                                                 |
| B29C 65/26        | 4-Punkt Untergruppe | . . . . Hot fluid [4]                                                                                                                     |
| B29C 65/28        | 4-Punkt Untergruppe | . . . . Flame or combustible material [4]                                                                                                 |
| B29C 65/30        | 4-Punkt Untergruppe | . . . . Electrical means [4]                                                                                                              |
| B29C 65/32        | 5-Punkt Untergruppe | . . . . . Induction [4]                                                                                                                   |
| B29C 65/34        | 2-Punkt Untergruppe | . . using heated elements which remain in the joint, e.g. "verlorenes Schweisselement" [4]                                                |
| B29C 65/36        | 3-Punkt Untergruppe | . . . heated by induction [4]                                                                                                             |
| B29C 65/38        | 2-Punkt Untergruppe | . . Impulse heating [4]                                                                                                                   |
| B29C 65/40        | 2-Punkt Untergruppe | . . Applying molten plastics, e.g. hot melt (using welding bar B29C 65/12; by moulding B29C 65/70) [4]                                    |
| B29C 65/42        | 3-Punkt Untergruppe | . . . between pre-assembled parts [4]                                                                                                     |
| B29C 65/44        | 2-Punkt Untergruppe | . . Joining a heated non-plastics element to a plastics element [4]                                                                       |
| B29C 65/46        | 3-Punkt Untergruppe | . . . heated by induction [4]                                                                                                             |
| B29C 65/48        | 1-Punkt Untergruppe | . using adhesives (heat-activated B29C 65/02; hot melts B29C 65/40; non-mechanical parts of adhesive processes, in general C09J 5/00) [4] |
| B29C 65/50        | 2-Punkt Untergruppe | . . using adhesive tape [4]                                                                                                               |
| B29C 65/52        | 2-Punkt Untergruppe | . . Applying the adhesive [4]                                                                                                             |
| B29C 65/54        | 3-Punkt Untergruppe | . . . between pre-assembled parts [4]                                                                                                     |
| B29C 65/56        | 1-Punkt Untergruppe | . using mechanical means [4]                                                                                                              |
| B29C 65/58        | 2-Punkt Untergruppe | . . Snap connection [4]                                                                                                                   |
| B29C 65/60        | 2-Punkt Untergruppe | . . Riveting [4]                                                                                                                          |
| B29C 65/62        | 2-Punkt Untergruppe | . . Stitching [4]                                                                                                                         |
| B29C 65/64        | 2-Punkt Untergruppe | . . Joining a non-plastics element to a plastics element, e.g. by force (B29C 65/44 takes precedence) [4]                                 |
| B29C 65/66        | 1-Punkt Untergruppe | . by liberation of internal stresses, e.g. shrinking of one of the parts to be joined [4]                                                 |
| B29C 65/68        | 2-Punkt Untergruppe | . . using auxiliary shrinkable element [4]                                                                                                |
| B29C 65/70        | 1-Punkt Untergruppe | . by moulding (using a particular moulding technique, <u>see</u> the relevant place for that technique) [4]                               |
| B29C 65/72        | 1-Punkt Untergruppe | . by combined operations, e.g. welding and stitching [4]                                                                                  |
| B29C 65/74        | 1-Punkt Untergruppe | . by welding and severing [4]                                                                                                             |
| B29C 65/76        | 1-Punkt Untergruppe | . Making non-permanent or releasable joints [4]                                                                                           |
| B29C 65/78        | 1-Punkt Untergruppe | . Means for handling the parts to be joined, e.g. for making containers or hollow articles [4]                                            |
| B29C 65/80        | 2-Punkt Untergruppe | . . Rotatable transfer means [4]                                                                                                          |
| B29C 65/82        | 1-Punkt Untergruppe | . Testing the joint [4]                                                                                                                   |
| <b>B29C 67/00</b> | <b>Hauptgruppe</b>  | <b>Shaping techniques not covered by groups B29C 39/00-B29C 65/00, B29C 70/00 or B29C 73/00 [4, 6]</b>                                    |



| Symbol            | Typ                 | Titel                                                                                                                                                                                         |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 67/02        | 1-Punkt Untergruppe | . Moulding by agglomerating [4]                                                                                                                                                               |
| B29C 67/04        | 2-Punkt Untergruppe | . . Sintering (combined with compression B29C 43/00) [4]                                                                                                                                      |
| B29C 67/06        | 2-Punkt Untergruppe | . . Coagulating [4]                                                                                                                                                                           |
| B29C 67/08        | 1-Punkt Untergruppe | . Screen moulding, e.g. forcing the moulding material through a perforated screen on to a moulding surface [4]                                                                                |
| B29C 67/20        | 1-Punkt Untergruppe | . for porous or cellular articles, e.g. of foam plastics, coarse-pored [4]                                                                                                                    |
| B29C 67/24        | 1-Punkt Untergruppe | . characterised by the choice of material [4]                                                                                                                                                 |
| <b>B29C 69/00</b> | <b>Hauptgruppe</b>  | <b>Combinations of shaping techniques not provided for in a single one of main groups B29C 39/00-B29C 67/00, e.g. associations of moulding and joining techniques; Apparatus therefor [4]</b> |
| B29C 69/02        | 1-Punkt Untergruppe | . of moulding techniques only [4]                                                                                                                                                             |
| <b>B29C 70/00</b> | <b>Hauptgruppe</b>  | <b>Shaping composites, i.e. plastics material comprising reinforcements, fillers or preformed parts, e.g. inserts (chemical aspects C08, e.g. C08J 5/00) [6]</b>                              |
| B29C 70/02        | 1-Punkt Untergruppe | . comprising combinations of reinforcements and fillers incorporated in matrix material, forming one or more layers, with or without non-reinforced or non-filled layers [6]                  |
| B29C 70/04        | 1-Punkt Untergruppe | . comprising reinforcements only, e.g. self-reinforcing plastics [6]                                                                                                                          |
| B29C 70/06        | 2-Punkt Untergruppe | . . Fibrous reinforcements only [6]                                                                                                                                                           |
| B29C 70/08        | 3-Punkt Untergruppe | . . . comprising combinations of different forms of fibrous reinforcements incorporated in matrix material, forming one or more layers, with or without non-reinforced layers [6]             |
| B29C 70/10        | 3-Punkt Untergruppe | . . . characterised by the structure of fibrous reinforcements [6]                                                                                                                            |
| B29C 70/12        | 4-Punkt Untergruppe | . . . . using fibres of short length, e.g. in the form of a mat [6]                                                                                                                           |
| B29C 70/14        | 5-Punkt Untergruppe | . . . . . oriented (oriented filler material B29C 70/62) [6]                                                                                                                                  |
| B29C 70/16        | 4-Punkt Untergruppe | . . . . using fibres of substantial or continuous length [6]                                                                                                                                  |
| B29C 70/18        | 5-Punkt Untergruppe | . . . . . in the form of a mat, e.g. sheet moulding compound (SMC) [6]                                                                                                                        |
| B29C 70/20        | 5-Punkt Untergruppe | . . . . . oriented in a single direction, e.g. roving or other parallel fibres [6]                                                                                                            |
| B29C 70/22        | 5-Punkt Untergruppe | . . . . . oriented in at least two directions forming a two dimensional structure [6]                                                                                                         |
| B29C 70/24        | 5-Punkt Untergruppe | . . . . . oriented in at least three directions forming a three dimensional structure [6]                                                                                                     |
| B29C 70/26        | 2-Punkt Untergruppe | . . Non-fibrous reinforcements only [6]                                                                                                                                                       |
| B29C 70/28        | 2-Punkt Untergruppe | . . Shaping operations therefor [6]                                                                                                                                                           |
| B29C 70/30        | 3-Punkt Untergruppe | . . . Shaping by lay-up, i.e. applying fibres, tape or broadsheet on a mould, former or core; Shaping by spray-up, i.e. spraying of fibres on a mould, former or core [6]                     |
| B29C 70/32        | 4-Punkt Untergruppe | . . . . on a rotating mould, former or core [6]                                                                                                                                               |
| B29C 70/34        | 4-Punkt Untergruppe | . . . . and shaping or impregnating by compression [6]                                                                                                                                        |
| B29C 70/36        | 4-Punkt Untergruppe | . . . . and impregnating by casting, e.g. vacuum casting [6]                                                                                                                                  |
| B29C 70/38        | 4-Punkt Untergruppe | . . . . Automated lay-up, e.g. using robots, laying filaments according to predetermined patterns [6]                                                                                         |
| B29C 70/40        | 3-Punkt Untergruppe | . . . Shaping or impregnating by compression (B29C 70/34 takes precedence) [6]                                                                                                                |
| B29C 70/42        | 4-Punkt Untergruppe | . . . . for producing articles of definite length, i.e. discrete articles [6]                                                                                                                 |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                          |
|-------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B29C 70/44        | 5-Punkt Untergruppe | . . . . . using isostatic pressure, e.g. pressure difference-, vacuum bag-, autoclave- or expanding rubber-moulding [6]                                                                                                                                                        |
| B29C 70/46        | 5-Punkt Untergruppe | . . . . . using matched moulds, e.g. for deforming sheet moulding compounds (SMC), prepregs [6]                                                                                                                                                                                |
| B29C 70/48        | 6-Punkt Untergruppe | . . . . . and impregnating the reinforcements in the closed mould, e.g. resin transfer moulding (RTM) [6]                                                                                                                                                                      |
| B29C 70/50        | 4-Punkt Untergruppe | . . . . for producing articles of indefinite length, e.g. prepregs, sheet moulding compounds (SMC), cross moulding compounds (XMC) [6]                                                                                                                                         |
| B29C 70/52        | 5-Punkt Untergruppe | . . . . . Pultrusion, i.e. forming and compressing by continuously pulling through a die [6]                                                                                                                                                                                   |
| B29C 70/54        | 3-Punkt Untergruppe | . . . Component parts, details or accessories; Auxiliary operations [6]                                                                                                                                                                                                        |
| B29C 70/56        | 4-Punkt Untergruppe | . . . . Tensioning reinforcements before or during shaping [6]                                                                                                                                                                                                                 |
| B29C 70/58        | 1-Punkt Untergruppe | . comprising fillers only [6]                                                                                                                                                                                                                                                  |
| B29C 70/60        | 2-Punkt Untergruppe | . . comprising a combination of distinct filler types incorporated in matrix material, forming one or more layers, and with or without non-filled layers [6]                                                                                                                   |
| B29C 70/62        | 2-Punkt Untergruppe | . . the filler being oriented during moulding (for fibres of short length B29C 70/14) [6]                                                                                                                                                                                      |
| B29C 70/64        | 2-Punkt Untergruppe | . . the filler influencing the surface characteristics of the material, e.g. by concentrating near the surface or by incorporation into the surface by force [6]                                                                                                               |
| B29C 70/66        | 2-Punkt Untergruppe | . . the filler comprising hollow constituents, e.g. syntactic foam [6]                                                                                                                                                                                                         |
| B29C 70/68        | 1-Punkt Untergruppe | . by incorporating or moulding on preformed parts, e.g. inserts, layers [6]                                                                                                                                                                                                    |
| B29C 70/70        | 2-Punkt Untergruppe | . . Completely encapsulating inserts [6]                                                                                                                                                                                                                                       |
| B29C 70/72        | 2-Punkt Untergruppe | . . Encapsulating inserts having non-encapsulated projections, e.g. extremities, terminal portions of electrical components [6]                                                                                                                                                |
| B29C 70/74        | 2-Punkt Untergruppe | . . Moulding material on a relatively small portion of the preformed part, e.g. outsert moulding [6]                                                                                                                                                                           |
| B29C 70/76        | 3-Punkt Untergruppe | . . . Moulding on edges or extremities of the preformed part [6]                                                                                                                                                                                                               |
| B29C 70/78        | 2-Punkt Untergruppe | . . Moulding material on one side only of the preformed part [6]                                                                                                                                                                                                               |
| B29C 70/80        | 3-Punkt Untergruppe | . . . Moulding sealing material into closure members [6]                                                                                                                                                                                                                       |
| B29C 70/82        | 2-Punkt Untergruppe | . . Forcing wires, nets or the like partially or completely into the surface of an article, e.g. by cutting and pressing (pressing beads or the like into a surface B29C 70/64) [6]                                                                                            |
| B29C 70/84        | 2-Punkt Untergruppe | . . Moulding material on preformed parts to be joined [6]                                                                                                                                                                                                                      |
| B29C 70/86        | 2-Punkt Untergruppe | . . Incorporating in coherent impregnated reinforcing layers [6]                                                                                                                                                                                                               |
| B29C 70/88        | 1-Punkt Untergruppe | . characterised primarily by possessing specific properties, e.g. electrically conductive, locally reinforced [6]                                                                                                                                                              |
| <b>B29C 71/00</b> | <b>Hauptgruppe</b>  | <b>After-treatment of articles without altering their shape; Apparatus therefor (B29C 44/56, B29C 73/00 take precedence; surface shaping B29C 59/00; chemical aspects C08J 7/00) [4, 5, 6]</b>                                                                                 |
| B29C 71/02        | 1-Punkt Untergruppe | . Thermal after-treatment [4]                                                                                                                                                                                                                                                  |
| B29C 71/04        | 1-Punkt Untergruppe | . by wave energy or particle radiation [4]                                                                                                                                                                                                                                     |
| <b>B29C 73/00</b> | <b>Hauptgruppe</b>  | <b>Repairing of articles made from plastics or substances in a plastic state, e.g. of articles shaped or produced by using techniques covered by this subclass or subclass B29D (retreading tyres B29D 30/54; devices for covering leaks in pipes or hoses F16L 55/16) [5]</b> |
| B29C 73/02        | 1-Punkt Untergruppe | . using liquid or paste-like material (B29C 73/16 takes precedence) [5]                                                                                                                                                                                                        |

| Symbol     | Typ                 | Titel                                                                                                                            |
|------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| B29C 73/04 | 1-Punkt Untergruppe | . using preformed elements [5]                                                                                                   |
| B29C 73/06 | 2-Punkt Untergruppe | . . using plugs sealing in the hole [5]                                                                                          |
| B29C 73/08 | 3-Punkt Untergruppe | . . . Apparatus therefor, e.g. for inserting [5]                                                                                 |
| B29C 73/10 | 2-Punkt Untergruppe | . . using patches sealing on the surface of the article (B29C 73/14 takes precedence) [5]                                        |
| B29C 73/12 | 3-Punkt Untergruppe | . . . Apparatus therefor, e.g. for applying (B29C 73/30 takes precedence) [5]                                                    |
| B29C 73/14 | 2-Punkt Untergruppe | . . using elements composed of two parts joined together after having been placed one on each side of the article [5]            |
| B29C 73/16 | 1-Punkt Untergruppe | . Auto-repairing or self-sealing arrangements or agents (sealing compositions, <u>see</u> Section C, e.g. C09K 3/10) [5]         |
| B29C 73/18 | 2-Punkt Untergruppe | . . the article material itself being self-sealing, e.g. by compression [5]                                                      |
| B29C 73/20 | 3-Punkt Untergruppe | . . . the article material only consisting in part of a deformable sealing material [5]                                          |
| B29C 73/22 | 2-Punkt Untergruppe | . . the article containing elements including a sealing composition, e.g. powder being liberated when the article is damaged [5] |
| B29C 73/24 | 1-Punkt Untergruppe | . Apparatus or accessories not otherwise provided for [5]                                                                        |
| B29C 73/26 | 2-Punkt Untergruppe | . . for mechanical pretreatment [5]                                                                                              |
| B29C 73/28 | 2-Punkt Untergruppe | . . for clamping and stretching flexible material, e.g. inner tubes [5]                                                          |
| B29C 73/30 | 2-Punkt Untergruppe | . . for local pressing or local heating [5]                                                                                      |
| B29C 73/32 | 3-Punkt Untergruppe | . . . using an elastic element, e.g. inflatable bag [5]                                                                          |
| B29C 73/34 | 3-Punkt Untergruppe | . . . for local heating [5]                                                                                                      |