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| <p>This Class 523 is considered to be an integral part of Class 520 (see the Class 520 schedule for the position of this Class in schedule hierarchy). This Class retains all pertinent definitions and class lines of Class 520</p> | <p>113</p> <p>114</p> <p>115</p> <p>116</p> <p>117</p> <p>118</p> <p>120</p> <p>121</p> <p>122</p> <p>123</p> <p>124</p> <p>125</p> <p>126</p> <p>127</p> <p>128</p> <p>129</p> <p>130</p> | <p>...Composition suitable for use as tissue or body member replacement, restorative, or implant</p> <p>...Composition which anchors by ingrowth of surrounding tissue</p> <p>...Composition suitable for use as tooth or bone replacement, restorative, or implant</p> <p>....Cement or filling composition</p> <p>.....Radio- or X-ray opaque</p> <p>...Sealant or adhesive</p> <p>..Denture plate repair, adhesive, cushion or modification composition, e.g., modification of denture base to improve fit, etc.</p> <p>...Aperture affecting composition, e.g., earplug, dilator, etc.</p> <p>..Composition having ingredient providing biocidal or biostatic protection thereto or process of preparing</p> <p>..Plant receptacle composition or process of preparing</p> <p>..Composition containing an additive which enhances degradation by environmental stimuli or process of preparing</p> <p>...By light, heat, or radiation</p> <p>...Containing organic salt of a transition metal</p> <p>...Containing organohalogen additive</p> <p>...Containing carbohydrate or cellular material derived from plant or animal</p> <p>..Composition containing nonresinous organic material derived from municipal solid waste disposal system or process of preparing</p> <p>..Composition for plugging pores in wells or other subterranean formations; consolidating formations in wells or cementing a well or process of preparing</p> |
| <p><b>SYNTHETIC RESINS (CLASS 520, SUBCLASS 1)</b></p>   |  |  |
| <p>1</p> <p>100</p> <p>101</p> <p>102</p> <p>103</p> <p>105</p> <p>106</p> <p>107</p> <p>108</p> <p>109</p> <p>111</p> <p>112</p>  | <p>113</p> <p>114</p> <p>115</p> <p>116</p> <p>117</p> <p>118</p> <p>120</p> <p>121</p> <p>122</p> <p>123</p> <p>124</p> <p>125</p> <p>126</p> <p>127</p> <p>128</p> <p>129</p> <p>130</p> | <p>..PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF</p> <p>..Food or tobacco contact composition or process of preparing</p> <p>...Food release coating</p> <p>..Odor masked, odor reduced or perfumed composition or process of preparing</p> <p>..Composition having reduced health risks upon exposure thereto during incidental handling or body contact or process of preparing; other than friction elements</p> <p>..Nonmedicated composition specifically intended for contact with living animal tissue or process of preparing; other than apparel</p> <p>..Contact lens making composition</p> <p>....Silicon-containing organic polymer</p> <p>....Polymer of a heterocyclic N-vinyl polymerizable compound</p> <p>...Dental or body impression taking material</p> <p>...Compositions for use in tape adhesives, binder or impregnate for a body fluid adsorbent device, e.g., a surgical adhesive tape, etc.</p> <p>...Non-thrombogenic</p>  |

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| 131 | ...Composition for treating unconsolidated or loose strata, e.g., sand consolidation, etc.   | 150 | ...Nonskid or nonslip composition for vehicle or pedestrian movement   |
| 132 | ..Composition for in situ soil conditioning or treating or process of preparing  | 152 | ...For wheeled vehicle   |
| 134 | ..Battery container or battery container cover composition or process of preparing   | 153 | ...Containing fibrous or polycrystalline refractory oxide  |
| 135 | ..Solar energy absorption or solar reflection composition or process of preparing  | 155 | ...Composition devoid of asbestos  |
| 136 | ..Composition sensitive to or resistant to radioactive material or cathode rays (e.g., electron bombardment, etc.) or process of preparing | 156 | ....Containing at least two organic materials, e.g., binder plus other organic material, etc.  |
| 137 | ..Electromagnetic wave absorbing composition or process of preparing (excludes visible, IR or UV portions of spectrum)                     | 157 | ...Containing at least two organic materials, e.g., binder plus other organic material, etc.   |
| 138 | ..Composition for contact with hot propulsion or exhaust gas or process of preparing   | 158 | ....Composition contains a phenolic, amine, or ketone condensate with aldehyde plus a polymer derived from ethylenic monomers only                                 |
| 139 | ..Composition related to metal foundry molding or metallurgical furnace or process of preparing  | 159 | ...Containing asbestos and at least one inorganic material   |
| 140 | ...Hot-top or taphole plug composition or process of preparing   | 160 | ..Printing ink composition for glass or ceramic substrate or process of preparing  |
| 141 | ..Composition for metallurgical furnace or oven or process of preparing  | 161 | ..Invisible, ballpoint, or typewriter ink compositions or process of preparing; or composition for correction ribbons or correction fluids or process of preparing |
| 142 | ..Organic polyisocyanate or derived from polyisocyanate  | 164 | ..Lead pencil or marking crayon composition or process of preparing  |
| 143 | ...Phenolic, amine, or ketone condensate with aldehyde   | 166 | ..Composition for puncture proof tire liner or in emergency tire repair (e.g., tire inflation, etc.) or process of preparing                                       |
| 144 | ...Furan-type material   | 167 | ..Composition utilized in the manufacturing or repairing of shoes (excluding shoe heels or soles or polish) or process of preparing                                |
| 145 | ...Phenolic or amine or ketone condensate with aldehyde  | 168 | ..Optical glass cementing or slide mounting composition or process of preparing  |
| 146 | ...With or derived from carboxylic acid or salt thereof, or organic sulfur material  | 169 | ..Antifogging or water repellent composition for optical or windshield application or process of preparing   |
| 147 | ...With or derived from organic hydroxyl group containing material containing eight or more carbon atoms                                   | 170 | ..Glass enamel composition or process of preparing   |
| 148 | ...Polyester based   |     |  |
| 149 | ..Friction element composition or process of preparing   |     |  |

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| 171 | ..Composition having opalescent, pearlescent, or variegated color or process of preparing  | 205 | ...Product having a solid synthetic polymer or solid polymer-forming system   |
| 172 | ..Pavement or sign marking or reflex reflecting composition or process of preparing  | 206 | ...Product having two or more solid synthetic polymers, or a solid polymer and a solid polymer-forming system   |
| 173 | ..Cable filling or flooding composition or process of preparing  | 207 | ...Solid polymer or solid polymer-forming system is encapsulated in or impregnated in a nonreactant material  |
| 174 | ..Phonograph record molding composition or process of preparing  | 208 | ...Solid polymer or solid polymer-forming system is or derived from an aldehyde or derivative   |
| 175 | ..Liquid-solid drag reduction composition or process of preparing  | 209 | ...Product having a silicon atom  |
| 176 | ..Anaerobic adhesive or thread sealing composition or process of preparing   | 210 | ...Product having a material encapsulated in or impregnated in a nonreactant material   |
| 177 | ..Coating or adhesive composition for application to a wet or contaminated surface (e.g., underwater or oil-contaminated, etc.) or process of preparing  | 211 | ...Reactant or catalyst is material encapsulated or impregnated   |
| 179 | ..Intumescent coating or ablative composition or process of preparing  | 212 | ...Product having a silicon atom as part of an organic compound   |
| 180 | ..Solid propellant binder composition or process of preparing  | 213 | ...Silicon containing organic material having an atom other than Si, C, H, or oxygen  |
| 181 | ..Composition devoid of magnetic materials and suitable for preparation of magnetic tape recording or process of preparing   | 214 | ...Product having glass   |
| 200 | ..Process of forming a composition of a solid polymer or solid polymer forming system by admixing a product in the form of a surface coated, impregnated, encapsulated, or surface modified fiber, sheet, particle, or web, with a material; or composition which is the result of said admixing | 215 | ...Product having elemental carbon  |
| 201 | ..Solid polymer particle enclosed in layer of diverse solid polymer, e.g., core-shell, etc.  | 216 | ...Product having a silicon atom  |
| 202 | ...Product having a monomeric ethylenic reactant material  | 217 | ...Glass  |
| 203 | ...Silicon ethylenic reactant  | 218 | ..Process of forming a composition having a nonreactant material selected for its special void characteristic; or composition containing same, e.g., syntactic foam, etc. |
| 204 | ...Product having an inorganic material surface coated onto an organic substrate   | 219 | ...Glass void   |
|     |  | 220 | ..Process of forming a composition having two or more solid materials having defined physical dimensions or surface areas; or composition containing same                 |
|     |  | 221 | ...Two or more solid synthetic polymers having defined physical dimension or surface area   |

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| 222 | ..Process of forming a composition having a fiber which is twisted, coiled, or involves specific mechanically interengaged fibers other than fibers solely of glass; or composition containing same, e.g., textiles, cloth, fiber bundles, mats, etc. | 318 | ..Utilizing stream or mass moving in a described attitude of presentment relative to a zone, vessel, or another apparently stationary mass or stream, excluding mere "pouring into", e.g., from above, below, tangentially, etc. |
| 223 | ..Process of forming a composition of a spheroidal material having physical dimension or composition containing same  | 319 | ..Utilizing treating or forming motion described by numerical data other than mere temperature, pressure, time, or amounts of material   |
| 300 | ..Utilizing direct application of magnetic, electrical, or wave energy  | 322 | ...Rotational rate (RPM) or velocity   |
| 303 | ..Controlling process in response to a stated measurement or test   | 323 | ...Work input, e.g., horsepower-hour/pound, etc.   |
| 305 | ..Adding material to maintain a stated equilibrium condition wherein the added material does not merely displace an equal amount from the treatment zone  | 324 | ..Utilizing a treatment zone specifically described by shape (other than nominally helical) or at least a part of which zone is specifically described by dimension, material, proportion, or angle or orientation               |
| 306 | ..Utilizing energy potential described as obtained as waste or by-product from a prior or concurrent operation  | 326 | ..Adding steam or hot water (T at least 60 degrees C, i.e., 140 degrees F)   |
| 307 | ..Utilizing a temperature greater than 250 degrees C (482 degrees F) or less than 0 degrees C   | 328 | ...Removal of material by treatment with hot water or steam, e.g., steam stripping, etc.   |
| 309 | ...With removal or comminution of material at a temperature greater than 250 degrees C or less than 0 degrees C, e.g., freeze drying, etc.  | 330 | ..Utilizing a gaseous stream to suspend or agitate a particulate solid polymer composition, e.g., fluidized bed, etc.  |
| 310 | ..Utilizing an ion exchanger or a solid sorptive material or semipermeable membrane   | 331 | ..Drying a composition which is situated on a moving substrate or drying utilizing a thin film evaporator  |
| 312 | ..Utilizing quiescent treatment condition   | 332 | ..Extracting material from solid polymer latex or aqueous dispersion or suspension with a liquid nonreactant material, e.g., solvent stripping, coprecipitation, etc.  |
| 313 | ..Utilizing mixing in a manner designed to avoid or minimize turbulence or shear, e.g., laminar flow, etc.  | 333 | ..Admixing a nonreactive additive ingredient in the form of a slurry, dispersion, or suspension (liquid-solid); said slurry dispersion or suspension containing no solid polymer or SICP   |
| 315 | ..Utilizing streams or masses moving relative to each other at a described angle of coincidence other than mere pouring, e.g., counter-current mixing, etc.   |     |  |

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| 334 | ...Slurried, dispersed, or suspended ingredient admixed with previously formed latex, aqueous dispersion or aqueous suspension of a solid polymer   | 353 | ..Utilizing plural discrete mixing operations in specifically described distinct noninterconnected zones   |
| 335 | ..Creaming, agglomerating, or coalescing a solid polymer latex or aqueous dispersion wherein solid polymer latex or aqueous dispersion is the result  | 375 | ..Radioactive or Group VIIIA atom containing NRM   |
| 336 | ..Inverting phase relationships or reappportioning the distribution of ingredients among phases   | 400 | ..Process of forming a composition containing a nonreactive material (NRM) and a polymer containing more than one 1,2-epoxy group, or a preformed polymer derived from or admixed with a reactant containing more than one 1,2-epoxy group, or with a polymer derived from an epihalohydrin and a polyhydric phenol or polyol; or composition or product thereof |
| 337 | ...Inversion to form water-in-oil system  | 401 | ...Contains inorganic water settable material NRM  |
| 339 | ..With removal of a phase   | 402 | ...Product contains water per se or water of hydration as designated nonreactive material (DNRM)   |
| 340 | ..Removing material at reduced pressure, e.g., flashing, sublimation, spray drying, etc.  | 403 | ....Two or more polymers containing more than one 1,2-epoxy group, two or more polymers derived from reactants containing more than one 1,2-epoxy group, or combination thereof, or one of said polymers and a reactant containing at least one 1,2-epoxy group  |
| 342 | ...With step of spraying or centrifuging  | 404 | ....With organic nitrogen or organic sulfur reactant   |
| 343 | ..Treating an intentional composition with a step of removing and recycling material into the composition   | 406 | ....Solid polymer derived from ethylenic reactants only (includes in situ reactants from plural 1,2-epoxides)  |
| 344 | ..Multistep operation achieved within a stated interval of time, e.g., total cycle time, etc.   | 407 | ....Polymer derived from ethylenic reactants only is graft, graft-type, block, or block-type copolymer   |
| 346 | ..Utilizing plural mixing operations of specified varying intensity, e.g., intensity of each mixing is reduced, etc.  | 408 | ....Two or more polymers derived from ethylenic reactants only   |
| 347 | ..Utilizing plural discrete pressures different than ambient  | 409 | ....Polymer derived from ethylenic reactants only derived from reactant containing chalcogen   |
| 348 | ..Utilizing plural interconnected distinct forming or treating zones or locations other than nominal screw extruder, e.g., zones interconnected in parallel or having varying flow velocity, etc. | 410 | ....Polymer derived from ethylenic reactant only derived from reactant containing oxygen heterocycle   |
| 351 | ..Utilizing plural mixing operations in preparation of a solid polymer inert ingredient concentrate, e.g., master batch, etc.   |     |  |
| 352 | ..Utilizing multistage coagulation of a solid polymer latex   |     |  |

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| 411 | .....Polymer derived from ethylenic reactants only derived from reactant containing nitrogen   | 433 | ...Polymer derived from reactant containing element other than C, H, O, or N or chlorine-containing reactant of three or more carbon atoms   |
| 412 | .....Polymer from ethylenic reactants only derived from reactant-containing carboxylic acid ester  | 434 | ...Polymer derived from ethylenic reactants only   |
| 413 | .....Polymer derived from ethylenic reactants only derived from plural unsaturated reactant  | 435 | ..Solid polymer derived from reactant containing element other than C, H, O, or N or chlorine-containing reactant of three or more carbon atoms  |
| 414 | ...Polymer contains more than one 1,2-epoxy group or one derived from reactant containing more than one 1,2-epoxy group is further derived from or reacted with organic nitrogen or sulfur | 436 | ..Polymer is graft, graft-type, block, or block-type   |
| 415 | .....Organic nitrogen compound contains isocyanate group   | 437 | ...Two or more polymers derived from ethylenic reactants only  |
| 416 | .....Organic nitrogen compound is amine-aldehyde condensation product  | 438 | ...Polymer derived from ethylenic reactants only derived from plural unsaturated reactant  |
| 417 | .....Two or more organic nitrogen compounds as reactants   | 439 | ...Polymer derived from ethylenic reactants only derived from heterocyclic reactant other than 1,2-epoxy solely  |
| 418 | .....Organic nitrogen compound contains N-(C)*-(C=O)- group where *= subscript 0,1,2 . . ., e.g., protein, etc.  | 440 | ..Designated nonreactive material (DNRM) has numerically specified characteristics, e.g., particle size, density, etc., other than viscosity, m.p., b.p., molec. wt., chemical composition or percentage range |
| 420 | .....Organic nitrogen compound contains three or more nitrogen atoms other than as solid polymer, e.g., diethylene triamine, etc.  | 442 | ...Heavy or transition metal or compound thereof   |
| 421 | .....Organic nitrogen compound contains element other than C, H, O, or N   | 443 | ....Silicon  |
| 423 | ...Polymer is graft, graft-type, block, or block-type copolymer  | 444 | ....Glass  |
| 424 | ...Polymer is phenol-aldehyde condensation product   | 445 | ...Boron DNRM  |
| 425 | ...Polymer derived from silicon reactant   | 446 | ..Biologically derived cellular material other than cereal, cotton, or diatomaceous earth DNRM   |
| 426 | ...Carboxylic acid, ester, or salt thereof DNRM  | 447 | ...Carbohydrate or derivative including tannin or derivative DNRM  |
| 427 | ...Composition wherein two or more polymers or a polymer and a reactant all contain more than one 1,2-epoxy group, or product thereof  | 448 | ...Cellulose derivative containing -C(=O)OR or N   |
| 428 | ...With reactant nitrogen or sulfur compound   | 449 | ...Protein or biologically active polypeptide DNRM   |
| 429 | .....Organic nitrogen compound contains N-heterocycle  | 450 | ...Coal, asphaltic, or bituminous material DNRM  |
|     |  | 451 | ...Phosphorus DNRM   |
|     |  | 452 | ...Phosphorus directly bonded to nitrogen  |
|     |  | 453 | ...Organic sulfur compound DNRM  |
|     |  | 454 | ...Ketone or aldehyde DNRM   |

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| 455 | ...Carboxylic acid or derivative devoid of heavy metal atom<br>DNRM   | 509 | ...Carbohydrate or derivative including tannin or derivative<br>DNRM   |
| 456 | ...Organic chalcogen compound<br>DNRM   | 510 | ...Phenol, phenol ether, or phenolate salt DNRM  |
| 457 | ...Elemental metal or metal compound other than as silicate DNRM  | 511 | ...Organic chalcogen other than metallocarboxylate salt, e.g., diethylene glycol, etc., DNRM   |
| 458 | ...Transition metal   | 512 | ...Elemental metal or elemental carbon DNRM  |
| 459 | ...Heavy metal  | 513 | ...Designated nonreactive material (DNRM) has numerically specified characteristic, e.g., particle size, density, etc., other than viscosity, m.p., b.p., molec. wt., chemical composition or percentage range |
| 460 | ....Group VA metal (As, Sb, Bi)   | 514 | ...Metal atom other than as silicate DNRM  |
| 461 | ...Organic nitrogen compound DNRM   | 515 | ...Transition metal atom   |
| 462 | ...Halogenated hydrocarbon other than carbon tetrachloride, chloroform, or methylene chloride DNRM  | 516 | ...Heavy metal atom  |
| 463 | ...Hydrocarbon other than xylenes, benzene, or toluene<br>DNRM  | 517 | ...Halogenated hydrocarbon other than methylene chloride, chloroform, or carbon tetrachloride DNRM   |
| 464 | ...Hydrocarbon having ethylenic unsaturation  | 518 | ...Bituminous, coal, or hydrocarbon other than benzene, toluene, or xylene or mixtures thereof DNRM  |
| 465 | ...Hydrocarbon wax  | 521 | ...Inorganic silicon atom other than glass DNRM  |
| 466 | ...Inorganic SI-O bond DNRM   | 522 | ...Contains graft, graft-type, block, or block-type copolymer  |
| 467 | ...Polymer derived from ethylenic reactants only  | 523 | ...Contains solid polymer derived from ethylenic reactants only, one of which contains chalcogen; or solid polymer reacted with ethylenic reactant containing chalcogen  |
| 468 | ...Elemental carbon DNRM  | 526 | ...Contains polymer derived from ethylenically unsaturated reactant only   |
| 500 | ..Process of forming a composition of an ethylenically unsaturated reactant or ethylenically unsaturated polymer admixed with nonreactive material (NRM) and a polyester whose polymer backbone was derived through the direct formation of the ester linkage, e.g., polyethylene terephthalate, polycaprolactone, etc., or product thereof | 527 | ...Glass DNRM  |
| 501 | ...Product contains water per se or water of hydration as DNRM or admixed with other designated nonreactant material  |     |  |
| 502 | ...Composition contains water-in-oil or oil-in-water mixture  |     |  |
| 503 | ...Organic nitrogen DNRM  |     |  |
| 504 | ...Organic chalcogen DNRM   |     |  |
| 505 | ...Metal compound other than silicate as DNRM   |     |  |
| 506 | ...Phosphorus DNRM  |     |  |
| 507 | ...Organic sulfur DNRM  |     |  |
| 508 | ...Organic compound containing nitrogen DNRM  |     |  |

**FOREIGN ART COLLECTIONS**

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS

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CLASS 523 SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS  
520 SERIES

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