

<p>This Class 521 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>SYNTHETIC RESINS (CLASS 520, SUBCLASS 1)</p> <p>25 .ION-EXCHANGE POLYMER OR PROCESS OF PREPARING</p> <p>26 ..Process of regenerating</p> <p>27 ..Membrane or process of preparing</p> <p>28 ..Previously formed solid ion-exchange polymer admixed with nonreactive material or ion-exchange polymer</p> <p>29 ..Polymer characterized by defined size or shape other than bead or pearl</p> <p>30 ..Chemically treated solid polymer</p> <p>31 ...Solid polymer derived from ethylenically unsaturated reactant only</p> <p>32Treated with nitrogen-containing material</p> <p>33Treated with sulfur-containing material</p> <p>34 ..Solid polymer derived from at least one 1,2-epoxy containing reactant</p> <p>35 ..Solid polymer derived from aldehyde or derivative</p> <p>36Treated with nitrogen-containing material</p> <p>37Treated with sulfur-containing reactant</p> <p>38 ..From ethylenically unsaturated reactant only</p> <p>39 ..From aldehyde or derivative</p> <p>40 .PROCESS OF TREATING SCRAP OR WASTE PRODUCT CONTAINING SOLID ORGANIC POLYMER TO RECOVER A SOLID POLYMER THEREFROM</p> <p>40.5 ..Process of treating scrap or waste product containing at least one polymer derived from ethylenic unsaturated monomers only</p>	<p>41 ...Treating rubber (or rubberlike materials) or polymer derived from a monomer having at least two ethylenic unsaturated moieties</p> <p>41.5 ...Treating with organic phosphorus-containing material</p> <p>42 ...Treating with organic nitrogen-containing material</p> <p>42.5 ...Treating with organic chalcogen-containing material</p> <p>43Containing organic sulfur</p> <p>43.5Containing carboxylic acid or anhydride group</p> <p>44Containing hydroxyl group</p> <p>44.5 ...Treating with hydrocarbon or halogenated hydrocarbon material</p> <p>45 ...Treating with steam or water</p> <p>45.5 ...Treating with mechanical action and in the absence of a chemically reactive additive or solvent</p> <p>46 ...Treating polymer derived from a monomer containing only carbon, hydrogen, and halogen or only carbon and halogen; or treating a polymer which has been derived from at least one hydrocarbon and which has been subsequently halogenated</p> <p>46.5 ...Treating polymer derived from vinyl chloride monomer</p> <p>47 ..Treating polymer derived from hydrocarbon monomers only</p> <p>47.5 ..Treating polysiloxane</p> <p>48 ..Treating polyester</p> <p>48.5 ...Treating with alcohol</p> <p>49 ..Treating polyurethane, polyurea (excluding urea-formaldehyde polymers), polyisocyanurate or polycarbodiimide</p> <p>49.5 ...Treating with alcohol or amine</p> <p>49.8 ..Treating polycarbonamide</p> <p>50 .CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.</p>
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50.5	..Compositions to be polymerized by wave energy in order to prepare a cellular product wherein said composition contains a rate-affecting material; or compositions to be modified by wave energy to prepare a cellular product wherein said composition contains a rate-affecting material; or processes of preparing or treating a solid polymer utilizing wave energy in order to prepare a cellular product	61	..Process of preparing a cellular product by removal of material from a solid polymer-containing matrix without expanding the matrix; composition which is nonexpandible and is designed to form a cellular product by said process; or process of preparing said composition
51	..Processes of preparing a cellular product having an integral skin	62	...Mixture of solid polymers present during cell formation
52	..Reticulated cellular product or processes of preparing a reticulated cellular product	63	..Cellular product-forming process wherein the removable material is present or is produced in situ during the solid polymer formation step
53	..Treating a cellular solid polymer by adding a material thereto which reacts with the polymer or forms a composition therewith, or products of said treating process	64	...Removing a liquid to form a cellular product
54	...Treating a cellular solid polymer by adding a solid polymer or solid polymer-forming composition	65	..Process of forming a cellular product from an aqueous latex, aqueous dispersion, or aqueous emulsion containing a solid polymer; process of preparing a latex, dispersion, or emulsion containing a solid polymer which is designed to be formed into a cellular product, or composition thereof
55	...Treating a cellular solid polymer by adding a material thereto which forms a composition therewith	66	...Treating a latex, dispersions, or emulsion containing a solid polymer at 32 degrees F. or below, e.g., freezing, etc.
56	..Particle which is expandible, process of preparing an expandible particle, or process of expanding a particle to form a cellular product	67	..Adding -N=C=X material to a latex, dispersion, or emulsion containing a solid polymer
57	...Including step of surface coating a particle or process of expanding a surface coated particle	68	...Adding fibrous material to a latex, dispersion, or emulsion containing a solid polymer
58	...Expanding utilizing plural expansion steps	69	...Latex, dispersion, or emulsion contains an additional solid polymer-forming system
59	...Expandible system contains two or more solid polymers or at least one solid polymer and at least one polymer-forming system	70	...Latex, dispersion, or emulsion contains two or more solid polymers
60	..Adding expanding agent subsequent to solid polymer formation	71	...Solid polymer is derived from a conjugated diene monomer
		72	...Utilizing cell forming agent other than air

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| 73 | ..Process of preparing a cellular product of a plastisol of a solid polymer derived solely from ethylenically unsaturated monomers; forming a plastisol of a solid polymer derived solely from an ethylenically unsaturated monomer which is designed to be formed into a cellular product, or composition thereof | 82 | ..Process of forming a cellular product subsequent to solid polymer formation in the presence of a stated ingredient, noncellular composition capable of forming a cellular product and containing a stated ingredient, or process of preparing same |
| 74 | ...By incorporation of material in gaseous state | 83 | ...Ingredient is asphaltic, bituminous, or water settable inorganic material, e.g., cement, plaster of Paris, etc. |
| 75 | ...System contains two or more solid polymers or contains at least one solid polymer and at least one polymer-forming system | 84.1 | ...Ingredient is protein, carbohydrate, or natural resin |
| 76 | ..Preparing a cellular product utilizing a stated ingredient which is surface coated or is a discrete solid particle containing a fluid encapsulated therein, processes of forming an expandible composition, containing said stated ingredient or composition therefrom | 85 | ...Ingredient contains a boron or phosphorus atom |
| 77 | ..Preparing a cellular product by decomposition of a solid polymer; or process of forming a composition containing a solid polymer which decomposes so as to subsequently form a cellular polymer, or composition therefrom | 86 | ...Ingredient is organic silicon compound |
| 78 | ..Preparing a cellular product by spraying a solid polymer containing material | 87 | ...Ingredient is aldehyde or ketone |
| 79 | ..Extruding a solid polymer containing material to form a cellular product | 88 | ...Ingredient is ether, alcohol, or inorganic alcoholate, e.g., phenol, etc. |
| 80 | ...Including solid polymer formation in or during extruding step | 89 | ...Ingredient contains a sulfur atom |
| 81 | ...System contains a mixture of solid polymer or at least one solid polymer and at least one solid polymer-forming system | 90 | ...Ingredient is a heterocyclic compound |
| | | 91 | ...Ingredient contains a silicon atom |
| | | 92 | ...Ingredient contains a metal atom |
| | | 93 | ...Metal atom is part of an organic compound |
| | | 94 | ...Ingredient is a nitrogen containing compound |
| | | 95 | ...Nitrogen compound contains a nitrogen atom bonded to a nitrogen or oxygen atom |
| | | 96 | ...Ingredient contains an -O-O- group |
| | | 97 | ...Ingredient contains a carbon atom double-bonded to oxygen, e.g., carbon dioxide, carboxylic acid, etc. |
| | | 98 | ...Ingredient contains only C and H atoms, only C and halogen atoms, or only C, H, and halogen atoms |
| | | 99 | ..Cellular product formation prior to or during solid polymer formation in the presence of a stated ingredient other than water |

100	...Ingredient is water settable inorganic composition	121	....Sulfur atom is part of an organic compound
101	...Ingredient is bituminous or asphaltic material	122	...Ingredient contains a silicon atom
102	...Ingredient is a protein containing material	123	...Ingredient contains a metal atom
103	...Ingredient contains a boron atom	124	....Metal atom is part of an organic compound
104	....Boron trihalide or complex thereof	125	....Organic metal compound contains a Group I or Group II metal atom
105	....Boron atom is part of an organic compound	126	....Organic metal compound contains tin
106	...Ingredient contains a phosphorus atom	127	.....Tin compound is dibutyl tin dilaurate or stannous octoate
107	....Phosphorus atom is part of an organic compound	128	...Ingredient is a nitrogen containing compound
108	....Organic phosphorus compound contains a phosphorus atom bonded to an atom other than oxygen	129	...Nitrogen compound contains a nitrogen atom bonded to three carbon atoms and wherein none of the carbon atoms are double-bonded to oxygen
109.1	...Ingredient is carbohydrate, or natural resin	130	...Ingredient contains a carbon atom double bonded to oxygen, e.g., carboxylic acid, etc.
110	...Ingredient contains a silicon atom as part an organic compound	131	...Ingredient contains only carbon and hydrogen atoms, only C and halogen atoms, or only C, H, and halogen atoms
111	....Organic silicon atom compound contains an atom other than oxygen, hydrogen, silicon, or carbon	132	...Said ingredient is substantially nonvolatile material, e.g., hydrocarbon waxes, greases, etc.
112	....Organic silicon compound contains an ether group	133	...Ingredient is gaseous at ambient conditions, e.g., air, oxygen, etc.
113	...Ingredient is aldehyde or ketone	134	..Cellular product derived from two or more solid polymers or from at least one solid polymer and at least one polymer-forming system
114	...Ingredient contains a -C-X-C- group wherein X is a chalcogen atom and none of the C atoms bonded to the chalcogen are double-bonded to an additional chalcogen atom	135	...At least one polymer is derived from reactant containing two or more three membered heterocyclic rings having two carbon atoms and one chalcogen atom or polymer-forming system contains the same type of reactant
115	....-C-X-C- compound contains a nitrogen atom	136	...At least one polymer is derived from an aldehyde or derivative or wherein the polymer-forming system contains the same type of reactant
116	....-C-X-C- compound contains a -C-XH group wherein X is a chalcogen atom		
117	...Ingredient contains a -C-XH group wherein X is a chalcogen atom and the carbon atom is not double-bonded to a chalcogen atom, phenol, etc.		
118	....-C-XH ingredient contains a nitrogen atom		
119	...Ingredient is inorganic halogen containing material		
120	...Ingredient contains a sulfur atom		

137	...At least one polymer is derived from a $-N=C=X$ reactant wherein X is a chalcogen atom or wherein the polymer-forming system contains the same type of reactant	155	..Cellular product derived from a $-N=C=X$ containing reactant wherein X is a chalcogen atom
138	...At least one polymer is derived from a polycarboxylic acid or derivative and a polyol or wherein the polymer-forming system containing the same type of reactants	156	...With three-membered heterocyclic reactant containing two carbon atoms and a hetero atom (i.e., nitrogen or a chalcogen atom)
139	...At least one polymer is derived from an ethylenically unsaturated aromatic reactant or wherein the polymer-forming system contains the same type of reactant	157	...With a $C-C(=X)-XH$ or $C-C(=X)-X-C(=X)-C-$ reactant wherein X is a chalcogen atom, e.g., carboxylic acid or anhydride, etc.
140	...At least one polymer is derived from reactant containing two or more ethylenic groups or wherein the polymer-forming system contains the same type of reactant	158	...With ketone, aldehyde, or aldehyde derivative
141	..Cellular vinyl alcohol polymer	159	... $N=C=X$ reactant having at least two $C-NH-C(=X)-$ groups, e.g., prepolymers, etc.
142	..Cellular product derived from ethylenically unsaturated reactants only	160	...Two or more $N=C=X$ reactants
143	...From acyclic mono-unsaturated hydrocarbon as only reactant	161	... $N=C=X$ reactant contains a heterocyclic ring
144	....Interpolymer	162	... $N=C=X$ reactant contains atoms other than carbon and hydrogen and other than nitrogen and chalcogen as part of the $N=C=X$ group
145	...From acyclic mono-unsaturated halogenated reactant	163	...With nitrogen containing reactant
146	...From aromatic reactant	164	...Nitrogen reactant contains a $C-XH$ group wherein X is a chalcogen atom and wherein the C atom is not double-bonded to a chalcogen atom
147	....With oxygen or nitrogen containing reactant	165	....Phosphorus containing reactant
148	....With conjugated diene reactant	166	....Nitrogen reactant contains a nitrogen containing heterocyclic ring
149	...From oxygen containing reactant	167	....Nitrogen reactant contains a $N-(C-C-O)-$ group
150	...From reactant containing two or more ethylenic unsaturated groups	168	...With phosphorus containing reactant
151	..Cellular polymer derived from tar, pitch, bitumen, asphalt, or plant material of unknown constitution, e.g., nut shell liquor, etc.	169	...Phosphorus reactant contains a $-O-(C-C-O)-$ group
152	..Cellular product derived from boron containing reactant	170	...With $-XH$ reactant wherein X is a chalcogen atom
153	..Cellular product derived from aluminum or heavy metal containing reactant	171	....$-XH$ reactant contains a halogen atom
154	..Cellular product derived from silicon containing reactant	172	....$-XH$ reactant contains a $C=X$ group, e.g., carboxylic acid ester, etc.
		173	....With non $-C=X$ containing reactant
		174	....$-XH$ reactant contains a $C-X-C$ group

175	.....C-X-C reactant contains a carbohydrate group	904	POLYURETHANE CELLULAR PRODUCT HAVING HIGH RESILIENCY OR COLD CURE PROPERTY
176	.....With non -C-X-C- containing reactant	905	HYDROPHILIC OR HYDROPHOBIC CELLULAR PRODUCT
177	.....C-X-C reactant contains a carbocyclic ring, e.g., aromatic, etc.	906	POLYURETHANE CELLULAR PRODUCT CONTAINING UNREACTED FLAME-RETARDANT MATERIAL
178	..Cellular product derived from a reactant containing two or more three membered heterocyclic rings wherein two of the ring members are carbon atoms and the remaining ring member is a chalcogen atom	907	NONURETHANE FLAMEPROOFED CELLULAR PRODUCT
179	...With -C(=X)-X containing reactant wherein X is a chalcogen atom	908	NUCLEATING AGENT FOR CELLULAR PRODUCT
180	..Cellular product derived from a phenol, phenol ether, or inorganic phenolate reactant	909	BLOWING-AGENT MODERATOR, E.G., KICKERS, ETC.
181	...With reactant which is an aldehyde or aldehyde derivative	910	PLURAL BLOWING AGENTS FOR PRODUCING NONPOLYURETHANE CELLULAR PRODUCTS
182	..Cellular product derived from a -C-C(=X)-X containing reactant wherein X is a chalcogen atom, e.g., phthalic acid, etc.	911	SURFACTANT FOR OTHER THAN POLYURETHANE CELLULAR PRODUCT
183	...Nitrogen containing reactant	912	SEPARATED REACTIVE MATERIALS UTILIZED IN PREPARING CELLULAR PRODUCT
184	...Nitrogen reactant contains at least two amino nitrogen atoms	913	CELL FORMING IN ABSENCE OF EXTERNAL HEAT
185	.....Carbocyclic reactant containing -C-C(=X)-X, e.g., containing carboxyl, etc.	914	POLYURETHANE CELLULAR PRODUCT FORMED FROM A POLYOL WHICH HAS BEEN DERIVED FROM AT LEAST TWO 1,2 EPOXIDES AS REACTANTS
186	..Cellular product derived from reactant which is an aldehyde or aldehyde derivative	915	UTILIZING ELECTRICAL OR WAVE ENERGY DURING CELL FORMING PROCESS
187	...Nitrogen containing reactant	916	CELLULAR PRODUCT HAVING ENHANCED DEGRADABILITY
188	...Nitrogen reactant contains a -N-C(=X)-N group wherein X is a chalcogen atom, e.g., urea, etc.	917	SPECIALIZED MIXING APPARATUS UTILIZED IN CELL FORMING PROCESS
189	..Cellular product derived from reactant containing a carbon to chalcogen bond	918	PHYSICAL AFTERTREATMENT OF A CELLULAR PRODUCT
		919	SINTERED PRODUCT
		920	CELLULAR PRODUCT CONTAINING A DYE OR PIGMENT
		921	PREPARING A NONPOLYURETHANE CELLULAR PARTICLE FROM A NONPARTICULATE MATERIAL

CROSS-REFERENCE ART COLLECTIONS

901	CELLULAR POLYMER CONTAINING A CARBODIIMIDE STRUCTURE
902	CELLULAR POLYMER CONTAINING AN ISOCYANURATE STRUCTURE
903	CELLULAR POLYMER HAVING REDUCED SMOKE OR GAS GENERATION

FOREIGN ART COLLECTIONS

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS