

This Class 516 is considered to be an integral part of Class 252 (see the Class 252 schedule for the position of this Class in schedule hierarchy). This Class retains all pertinent definitions and class lines of Class 252.

- 1       **CONTINUOUS GAS OR VAPOR PHASE:  
          COLLOID SYSTEMS; COMPOSITIONS  
          CONTAINING AN AGENT FOR MAKING  
          OR STABILIZING COLLOID  
          SYSTEMS; PROCESSES OF MAKING  
          OR STABILIZING COLLOID  
          SYSTEMS; PROCESSES OF  
          PREPARING THE COMPOSITIONS  
          (E.G., SMOKE, FOG, AEROSOL,  
          CLOUD, MIST)**
- 2        ..Discontinuous phase formed by  
          combustion or oxidation/  
          reduction reaction (e.g.,  
          smudge-pot smoke)
- 3        ..Steam present
- 4        ..Discontinuous phase formed by  
          hydrolysis step (e.g., metal  
          oxide from metal chloride/  
          water reaction)
- 5        ..Steam present
- 6        ..Discontinuous phase primarily  
          liquid (e.g., mist, fog)
- 7        ..The discontinuous phase  
          contains a solid phase (e.g.,  
          seed nucleus, microcapsules,  
          smokey fog)
- 8        ..The continuous phase contains a  
          propellant derived from non-  
          gaseous phase (e.g., liquified  
          propellant, such as  
          hydrocarbon, halogenated  
          hydrocarbon, dimethylether;  
          sorbed or dissolved CO2)
- 8.1     ...Precursor contains plural  
          immiscible liquid phases  
          (e.g., emulsion)

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**CONTINUOUS LIQUID OR  
SUPERCRITICAL PHASE: COLLOID  
SYSTEMS; COMPOSITIONS AN AGENT  
FOR MAKING OR STABILIZING  
COLLOID SYSTEMS; PROCESSES OF  
MAKING OR STABILIZING COLLOID  
SYSTEMS; PROCESSES OF  
PREPARING THE COMPOSITIONS  
(E.G., MICELLE; THICKENING  
AGENT; PROTECTIVE COLLOID  
AGENT; COMPOSITION CONTAINING  
AN EMULSIFYING AGENT WITH NO  
DISPERSANT DISCLOSED; ORGANIC  
LIQUID EMULSIFIED IN ANHYDROUS  
HF)**

- 10     ..Having discontinuous gas or  
          vapor phase, e.g., foam:
- 11     ..With particulate solid
- 12     ..The agent contains organic  
          compound containing halogen
- 13     ..The agent contains organic  
          compound containing phosphorus  
          or silicon
- 14     ..The agent contains organic  
          compound containing sulfoxy\*
- 15     ..The agent contains organic  
          compound containing nitrogen,  
          except if present solely as  
          NH4+
- 16     ...The compound contains plural  
          peptide linkages, i.e.,  
          compound formed from amino  
          acids, natural or synthetic,  
          by reaction of a carboxyl  
          group of one such amino acid  
          with an amino group of another  
          same or different such amino  
          acid
- 17     ...The compound contains  
          repeating -(OCnH2n)- (i.e.,  
          repeating unsubstituted  
          oxyalkylene)
- 18     ..The agent contains organic  
          compound containing oxygen
- 19     ...The compound contains -C(=O)OH  
          group or salt thereof
- 20     ..Primarily organic continuous  
          liquid phase (e.g., organic  
          liquid emulsified in an  
          organic liquid)
- 21     ..Discontinuous phase primarily  
          inorganic liquid (e.g., water-  
          in-oil emulsion, w/o)

22	...Three or more phases (e.g., w/ o emulsion also containing solid particle suspension)	37	....The inorganic material primarily contains elemental sulfur
23	...The agent contains organic compound containing silicon	38	.Aqueous continuous liquid phase and discontinuous phase primarily coal or elemental carbon or bituminous (e.g., asphalt, pitch, tar, montan wax, paraffin wax)
24	...The agent contains organic compound containing phosphorus (e.g., lecithin)	39	..The agent is formed in situ from native precursor by adding inorganic alkaline material (e.g., NaOH or TSP added to in situ acid)
25	...The agent contains organic compound containing sulfoxy*	40	..The agent contains organic compound containing phosphorus
26	....The organic compound contains nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>	41	..The agent contains organic compound containing sulfoxy*
27	...The agent contains organic compound containing nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>	42	...The compound contains -C(=O)OH or salt thereof
28	...The agent contains organic compound containing oxygen	43	..The agent contains organic compound containing nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>
29	....The compound contains - C(=O)O <sup>-</sup> (e.g., glyceride)	44	...The compound contains plural peptide linkages, i.e., compound formed from amino acids, natural or synthetic, by reaction of a carboxyl group of one such amino acid with an amino group of another same or different such amino acid
30	....The compound contains repeating -(OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)	45	...The compound contains repeating -(OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)
31	..Discontinuous phase material primarily solid or semisolid (e.g., colloid- sized dispersion of gel particles, or paraffin wax, or polytetrafluoroethylene)	46	..The agent contains organic compound containing oxygen
32	...The material primarily contains elemental carbon (e.g., graphite, diamond)	47	...The compound contains -C(=O)OH or salt thereof (e.g., soap, rosin, fatty acid)
33	...The material primarily contains inorganic material (e.g., chrome yellow, sodium nitrite)	48	....Inorganic alkaline reactant is added in a separate step
34	....The inorganic material primarily contains compounds containing both silicon and oxygen, or both aluminum and oxygen, or combinations thereof (e.g., silica (SiO <sub>2</sub> ) organosol*, silica alcosol, talc, clay)	49	....With added solid non- bituminous particulate
35	....The inorganic material primarily contains elemental alkali metal or primarily contains an alloy which primarily contains elemental alkali metal (e.g., sodium)	50	...With added solid non- bituminous particulate
36	....The inorganic material primarily contains antimony oxide	51	...The compound contains repeating -(OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)
		52	..The agent contains specified solid non-bituminous particulate (e.g., clay)

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| <p>53 .Aqueous continuous liquid phase and discontinuous phase primarily organic liquid (e.g., organosilicon* oil- or mineral-oil*-in-water, o/w emulsion)</p> <p>54 ..Three or more liquid phases (e.g., water-in-oil-in-water, w/o/w emulsion)</p> <p>55 ..The agent contains organic compound containing silicon</p> <p>56 ..The agent contains organic compound containing phosphorus (e.g., lecithin)</p> <p>57 ...The compound contains repeating <math>-(OCnH2n)-</math> (i.e., repeating unsubstituted oxyalkylene)</p> <p>58 ..The agent contains organic compound containing sulfoxy* (e.g., sodium lauryl sulfate)</p> <p>59 ...The compound contains nitrogen, except if present solely as <math>NH4+</math> (e.g., isopropylammonium dodecylbenzene sulfonate)</p> <p>60 ....The nitrogen is a ring member</p> <p>61 ....The compound contains -S(O2)NHH where substitution may be made for the hydrogen</p> <p>62 ....The compound contains -C(=O)NHH where substitution may be made for the hydrogen</p> <p>63 ..The compound contains carboxylic acid ester group (e.g., partial ester, mixed ester)</p> <p>64 ...The compound contains <math>-C(=O)OH</math> or salt thereof</p> <p>65 ...The compound is mineral-oil* sulfonic acid (e.g., mahogany* or green* acid)</p> <p>66 ..The compound contains substituted or unsubstituted benzene ring (e.g., di-butyl-naphthalene sulfonic acid)</p> <p>67 ..The agent contains organic compound containing nitrogen, except if present solely as <math>NH4+</math></p> <p>68 ...The nitrogen is a ring member (e.g., polyisocyanurate)</p> <p>69 ...The compound contains -C(=O)NHH where substitution may be made for the hydrogen</p> | <p>70</p> <p>71</p> <p>72</p> <p>73</p> <p>74</p> <p>75</p> <p>76</p> <p>77</p> <p>78</p> <p>79</p> <p>80</p> <p>81</p> | <p>...The compound contains plural peptide linkages, i.e., compound formed from amino acids, natural or synthetic, by reaction of a carboxyl group of one such amino acid with an amino group of another same or different such amino acid</p> <p>...The compound contains repeating <math>-(OCnHn)-</math> (i.e., repeating unsubstituted oxyalkylene)</p> <p>..The agent contains organic compound containing oxygen</p> <p>...The compound contains carboxylic acid ester group (e.g., partial ester, natural (glyceride) oil)</p> <p>...The carboxylic acid ester group containing compound contains repeating <math>-(OCnH2n)-</math> (i.e., repeating unsubstituted oxyalkylene)</p> <p>...The compound contains <math>-C(=O)OH</math> or salt thereof (e.g., alkali metal soap)</p> <p>...The compound contains repeating <math>-(OCnH2n)-</math> (i.e., repeating unsubstituted oxyalkylene)</p> <p>.Aqueous continuous liquid phase and discontinuous phase primarily solid (e.g., water based suspensions, dispersions, or certain sols*, of natural or synthetic ester-wax, beeswax, carnauba wax; or latex dispersion)</p> <p>..The solid is primarily inorganic material (e.g., mercurous halide)</p> <p>...The material primarily contains compound containing silicon covalently bonded to oxygen (e.g., aluminum silicate, clay)</p> <p>...The material is a silica particle having a distinct layer containing non-monovalent metal oxide (e.g., alumina coated silica sol)</p> <p>...The material is substantially pure silica sol</p> |
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CLASS 516 COLLOID SYSTEMS AND WETTING AGENTS; SUBCOMBINATIONS  
THEREOF; PROCESSES OF

82	.....The silica is formed or grown by reaction of alkali silicate and non-siliceous inorganic acid (e.g., H <sub>2</sub> SO <sub>4</sub> )	98	<b>CONTINUOUS OR SEMICONTINUOUS SOLID PHASE (I.E., SYSTEMS WHICH EXHIBIT PLASTICITY, ELASTICITY, OR RIGIDITY): COLLOID SYSTEMS; COMPOSITIONS CONTAINING AN AGENT FOR MAKING OR STABILIZING COLLOID SYSTEMS; PROCESSES OF MAKING OR STABILIZING COLLOID SYSTEMS; PROCESSES OF PREPARING THE COMPOSITIONS (E.G., GEL, PASTE, GELLED EMULSION, FLOC)</b>
83	.....Ion exchange step occurs before or during growing or forming the sol		
84	.....Ion-exchange step employed in post-treatment (e.g., purification)		
85	.....Gel forming step (e.g., peptize)		
86	.....Hydrolysis step or elemental silicon source (e.g., forming fumed silica)	99	.The solid phase contains organic material
87	.....Having colloid system stabilizing or preserving agent which is organic compound (e.g., deflocculant, antibacterial, esterification of unstable silicasols)	100	..The organic material coats, impregnates, or surface modifies solid inorganic material (e.g., dextrin modified clay)
88	...The material primarily contains compound containing both metal and oxygen (e.g., silver nitrate)	101	..The organic material contains organic compound containing nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>
89	...The metal present in the greatest amount is yttrium, scandium, or rare earth (e.g., hydrated ceric dioxide)	102	..The organic material contains organic compound containing nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>
90	...The metal present in the greatest amount is titanium, zirconium, or hafnium	103	..The compound contains plural peptide linkages, i.e., compound formed from amino acids, natural or synthetic, by reaction of a carboxyl group of one such amino acid with an amino group of another same or different such amino acid
91	...The metal present in the greatest amount is antimony, bismuth, or arsenic	104	..The organic material contains organic compound containing oxygen
92	...The metal present in the greatest amount is tin, lead, or germanium (e.g., lead sulfate)	105	...The compound is a carbohydrate* or carbohydrate-derivative* (e.g., mono- or polysaccharide)
93	...The metal present in the greatest amount is aluminum	106	....The compound is cellulose or derivative thereof (e.g., CMC)
94	.....The aluminum material is fibrous or elongate	107	....The compound is gum or derivative thereof
95	...The metal present in the greatest amount in the compounds is iron, nickel, or cobalt	108	...The compound contains carboxylic acid ester group (e.g., glycerides)
96	...The material primarily contains elemental selenium, tellurium, or sulfur, or compound thereof (e.g., zinc sulfide)	109	...The compound contains -C(=O)OH or salt thereof (e.g., calcium stearate)
97	...The material primarily contains elemental platinum group metal, copper, silver, or gold, or compound thereof		

110	.The solid phase contains metal silicate or clay (e.g., bentonite, kaolin)	125	..The agent contains organic compound containing phosphorus (e.g., lecithin)
111	.The solid phase contains silica (e.g., hydrated silicagel)	126	..The agent contains organic compound containing sulfoxy* (e.g., organo- sulfone, - sulfate, -sulfonate)
112	.The solid phase contains alumina (e.g., hydrated alumina-gel)	127	..Nitrogen covalently bound to the sulfur of the sulfoxy*
113	<b>COMPOSITIONS CONTAINING AN AGENT FOR BREAKING (RESOLVING) OR INHIBITING COLLOID SYSTEMS; PROCESSES OF BREAKING (RESOLVING) OR INHIBITING COLLOID SYSTEMS (E.G., GEL BREAKING OR INHIBITING, COAGULATING, FLOCCULATING); PROCESSES OF PREPARING THE COMPOSITIONS</b>	128	..The agent contains organic compound containing nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>
114	.Continuous gas or vapor phase colloid system (e.g., fog dispelling, dust or contrail suppressing)	129	...The compound contains oxygen
115	.Continuous liquid phase colloid system and discontinuous gas or vapor phase (e.g., foam)	130	...The compound contains - C(=O)NHH where substitution may be made for the hydrogen
116	..The agent contains both organic and inorganic (except water) materials (e.g., amine hydrophobized silica)	131	....The compound contains plural -C(=O)NHH where substitution may be made for the hydrogen
117	...The agent contains organic compound containing silicon (e.g., siloxane hydrophobized silica)	132	..The agent contains organic compound containing oxygen
118	....The compound is polysiloxane which contains repeating - (OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)	133	...The compound contains carboxylic acid ester group (e.g., natural (glyceride) oil)
119	....The compound contains nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup> (e.g., organosilazane treated silica)	134	...The compound contains repeating -(OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)
120	....The agent contains organosilane coated or treated solid particle	135	.Continuous liquid phase colloid system and discontinuous liquid phase (e.g., breaking an emulsion)
121	....The agent contains primarily aqueous continuous phase, i.e., water carrier	136	..Breaking (resolving) or inhibiting occurs on the surface of a solid agent (e.g., adsorbent, absorbent, differential adherence surface, filter, sharp edged particles)
122	..The agent contains inorganic (except water) material	137	...The agent contains both organic and inorganic (except water) material
123	..The agent contains organic compound containing silicon (e.g., alkylpolysiloxane oil)	138	...The agent contains inorganic (except water) material (e.g., metal screen, CaCO <sub>3</sub> , glass, clay, diatomaceous earth, sand, gravel, alum)
124	...The compound is polysiloxane which contains repeating - (OCnH <sub>2</sub> n)- (i.e., repeating unsubstituted oxyalkylene)	139	..The agent contains material which is different from the primary components of both liquid phases of the emulsion colloid system (i.e., more than only diluting)

140	...The agent is liquid bath or liquid which acts to physically or chemically dissolve, bind, or destroy at least part of one liquid phase (except a colloid system making or stabilizing agent) (e.g., aqueous CaCl <sub>2</sub> for chemically binding water)	153	.....The anion of the salt contains substituted or unsubstituted benzene ring (e.g., cyclohexylamine salt of alkylated naphthalene sulfonic acid)
141	...Aqueous-petroleum, petroleum-aqueous, aqueous-hydrocarbon, or hydrocarbon-aqueous emulsion systems	154	.....The compound contains carboxylic acid ester group
142	....The agent contains both organic and inorganic (except water) material	155	.....The compound contains -C(=O)OH or salt thereof (e.g., partial ester, mixed ester, product of Twitchell process)
143	....The agent contains organic compound	156	.....The compound contains ether group
144	.....The compound contains silicon	157	.....The compound contains -C(=O)OH or salt thereof (e.g., sulfonated oleic acid)
145	.....The compound contains phosphorus (e.g., sulfonated lecithin)	158	.....The compound contains ester (e.g., cellulose sulfate)
146	.....The compound contains sulfoxy* (e.g., sulfonate terpene)	159	.....The compound is mineral-oil* sulfonic acid (e.g., mahogany* or green* acid)
147	.....The compound contains polymer of substituted or unsubstituted phenol and substituted or unsubstituted aldehyde	160	.....The compound contains substituted or unsubstituted benzene ring (e.g., sulfonated nonylphenol, ammonium salt of butylated naphthalene sulfonic acid)
148	.....The compound contains nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup>	161	.....The compound contains nitrogen, except if present solely as NH <sub>4</sub> <sup>+</sup> (e.g., nitroso phenol)
149	.....The nitrogen is a ring member (e.g., imidazoline salt of an organosulfonic acid)	162	.....The nitrogen is a ring member
150	.....The compound contains -C(=O)NH or -S(O <sub>2</sub> )NHH where substitution may be made for the Hydrogen	163	.....The compound contains repeating -(OC <sub>n</sub> H <sub>2n</sub> )- (i.e., repeating unsubstituted oxyalkylene)
151	.....The nitrogen is part of the cation of a salt formed with the organic compound containing sulfoxy* (e.g., triethanol amine salt, quaternary amine salt)	164	.....The compound contains polymer of substituted or unsubstituted phenol and substituted or unsubstituted aldehyde
152	.....The agent contains mineral-oil* sulfonic acid (e.g., cyclohexylamine salt of mahogany* or green* acids)	165	.....The compound contains -C(=O)NHH where substitution may be made for the hydrogen
		166	.....The nitrogen is present in the cation of a salt
		167	.....The compound contains carboxylic acid ester group

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|-----|---|-----|--|
| 168 | .....The compound contains repeating $-(OCnH2n)-$ (i.e., repeating unsubstituted oxyalkylene) (e.g., alkoxyated phenol-aldehyde polymer)  | 180 | .....The compound contains plural nitrogen containing mers* bonded directly to each other (e.g., poly-diallyldimethylammonium chloride, polyamine) |
| 169 | .....The compound contains $-C(=O)NHH$ where substitution may be made for the hydrogen  | 181 | .....The compound contains oxygen (e.g., cresylic acid)  |
| 170 | .....The compound contains plural peptide linkages, i.e., compound formed from amino acids, natural or synthetic, by reaction of a carboxyl group of one such amino acid with an amino group of another same or different such amino acid | 182 | .....The compound contains sulfur (except sulfoxy*) (e.g., sulfide or disulfide linkage)   |
| 171 | .....The compound contains plural $-C(=O)NHH$ where substitution may be made for the hydrogen (e.g., urea formaldehyde)   | 183 | .....The compound contains polymer of substituted or unsubstituted phenol and substituted or unsubstituted aldehyde                                |
| 172 | .....The compound contains plural nitrogen containing mers* bonded directly to each other (e.g., acylated polyamine, polyamide)   | 184 | .....The compound contains carboxylic acid ester group   |
| 173 | .....The compound contains repeating $-(OCnH2n)-$ (i.e., repeating unsubstituted oxyalkylene)   | 185 | .....The compound contains carboxylic acid ester group (e.g., lactone, natural (glyceride) oil, oxyalkylated `blown fatty acid`*)                  |
| 174 | .....The compound is a salt composed of an organic anion and a nitrogen-containing organic cation (e.g., triethanol amine salt of oleic acid)   | 186 | .....The compound contains $-C(=O)OH$ or salt thereof (e.g., partial ester, fractional ester, `blown fatty acid`*)                                 |
| 175 | .....The salt contains repeating $-(OCnH2n)-$ (i.e., repeating unsubstituted oxyalkylene)   | 187 | .....The compound contains ether group   |
| 176 | .....The compound contains carboxylic acid ester group  | 188 | .....The compound is a carbohydrate* or carbohydrate-derivative*   |
| 177 | .....The compound contains repeating $-(OCnH2n)-$ (i.e., repeating unsubstituted oxyalkylene)   | 189 | .....The compound contains ether group   |
| 178 | .....The ester group is derived from mono-basic acid reactant   | 190 | .....The compound contains $-C(=O)OH$ or salt thereof (e.g., glyceride soap, naphthenic acid)  |
| 179 | .....The compound contains repeating $-(OCnH2n)-$ (i.e., repeating unsubstituted oxyalkylene)   | 191 | .....The compound contains ether group (e.g., polyethylene oxide)  |
|     |   | 192 | .....The compound is a carbohydrate* or carbohydrate-derivative*   |
|     |   | 193 | .....The compound contains substituted or unsubstituted benzene ring (e.g., oxyalkylated bisphenol)  |
|     |   | 194 | ..Breaking (resolving) or inhibiting by vaporizing, heating, or cooling  |
|     |   | 195 | ...With centrifuging, mechanical shocking, or specified agitating  |

- 196 ...With dilution by principal component of one of the phases
- 197 ..Breaking (resolving) or inhibiting by centrifuging, mechanical shocking, or specified agitating
- 198 **COMPOSITIONS CONTAINING A WETTING AGENT; PROCESSES OF WETTING; PROCESSES OF PREPARING THE COMPOSITIONS (E.G., SPREADING, PENETRATING, LEVELING)**
- 199 .The agent contains organic compound containing phosphorus
- 200 .The agent contains organic compound containing sulfoxy\*
- 201 ..The compound contains nitrogen, except if present solely as NH<sub>4</sub><sup>+</sup>
- 202 ..The compound contains -C(=O)OH or salt thereof
- 203 .The agent contains organic compound containing nitrogen, except if present solely as NH<sub>4</sub><sup>+</sup>
- 204 .The agent contains organic compound containing oxygen (e.g., carboxylic acid ester)
- CROSS-REFERENCE ART COLLECTIONS**
- 900 **LIQUID CRYSTAL MATERIAL OF, OR FOR, COLLOID SYSTEM (E.G., G PHASE)**
- 901 **SUBSTANTIALLY PURE CARBON (E.G., GRAPHITE, LAMP BLACK, CARBON BLACK, FULLERENES)**
- 902 **GELLED EMULSION**
- 903 **TWO OR MORE GELLANTS**
- 904 **FERMENTATION FOAM BREAKING OR INHIBITING**
- 905 **AGENT COMPOSITION, PER SE, FOR COLLOID SYSTEM MAKING OR STABILIZING (E.G., FOAMING, EMULSIFYING, DISPERSING, GELLING; FOR WETTING AGENTS SEE 516/198+)**
- 906 .The agent contains organic compound containing silicon
- 907 .The agent contains organic compound containing phosphorus (e.g., lecithin)
- 908 ..The compound contains repeating -(OCnH<sub>2</sub>n)- (i.e., repeating unsubstituted oxyalkylene)
- 909 .The agent contains organic compound containing sulfoxy\*
- 910 ..The compound contains nitrogen, except if present solely as NH<sub>4</sub><sup>+</sup>
- 911 ...The compound contains -S(O<sub>2</sub>)NHH where substitution may be made for the hydrogen
- 912 ...The compound contains -C(=O)NHH where substitution may be made for the hydrogen
- 913 ..The compound contains -C(=O)OH or salt thereof
- 914 .The agent contains organic compound containing nitrogen, except if present solely as NH<sub>4</sub><sup>+</sup>
- 915 ..The compound contains -C(=O)NHH where substitution may be made for the hydrogen
- 916 ..The compound contains repeating -(OCnH<sub>2</sub>n)- (i.e., repeating unsubstituted oxyalkylene)
- 917 .The agent contains organic compound containing oxygen
- 918 ..The compound contains carboxylic acid ester group
- 919 ..The compound contains -C(=O)OH or salt thereof
- 920 ..The compound contains repeating -(OCnH<sub>2</sub>n)- (i.e., repeating unsubstituted oxyalkylene)
- 921 **COLLOID SYSTEMS HAVING SPECIFIED HIGH PURITY (E.G., ULTRA-PURE SILICA)**
- 922 **COLLOID SYSTEMS HAVING SPECIFIED PARTICLE SIZE, RANGE, OR DISTRIBUTION (E.G., BIMODAL PARTICLE DISTRIBUTION)**
- 923 .Emulsion
- 924 **SIGNIFICANT DISPERSIVE OR MANIPULATIVE OPERATION OR STEP IN MAKING OR STABILIZING COLLOID SYSTEM**
- 925 .Phase inversion
- 926 .Phase change (e.g., melting)
- 927 .In situ formation of a colloid system making or stabilizing agent which chemical reaction



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| 928 | .Mixing combined with non-mixing operation or step, successively or simultaneously (e.g., heating, cooling, pH change, ageing, milling) | FOR 110 | ....Bituminous dispersands (252/311.5)   |
|     |   | FOR 111 | ....Oil or liquid dispersands (252/312)  |
| 929 | .Specified combination of agitation steps (e.g., mixing to make subcombination composition followed by homogenization)                  | FOR 112 | ....Inorganic major dispersands only (252/313.1)   |
|     |   | FOR 113 | ....Silica (252/313.2)   |
|     |   | FOR 114 | ...Dispersive or manipulative operations (252/314)   |
| 930 | ..Low shear followed by high shear  | FOR 115 | .Gels, coagulates, or dispersands (252/315.01)   |
| 931 | ..High shear followed by low shear  | FOR 116 | ..Organic (252/315.1)  |
|     |   | FOR 117 | ...Inorganic material coated, impregnated, or surface-modified with organic material (252/315.2) |

**FOREIGN ART COLLECTIONS**

**FOR 000 CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collections listed below. These Collections contain ONLY foreign patents or non-patent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

**FOR 100 COLLOIDS AND POTENTIAL COLLOIDS; CHEMICAL PROCESSES OF MAKING AND BREAKING (252/302)**

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|---------|---|
| FOR 101 | .Including separations or comminutions by colloid functions (252/303) |
| FOR 102 | .Colloid (polyphase discontinuous dispersion) systems (252/304)       |
| FOR 103 | ..Smokes, fogs, or gaseous primary dispersants (252/305)              |
| FOR 104 | ..Liquid primary dispersants (252/306)                                |
| FOR 105 | ...Foams or gaseous primary dispersands (252/307)                     |
| FOR 106 | ...Organic major dispersants only (252/308)                           |
| FOR 107 | ....Inorganic major dispersands only (252/309)                        |
| FOR 108 | ..Water as major dispersant only (252/310)                            |
| FOR 109 | ....Organic major dispersands only (252/311)                          |

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|---------|--|
| FOR 118 | ...Carbohydrate or derivative (252/315.3)  |
| FOR 119 | ...Carboxylic acid ester, acid, or salt thereof (252/315.4)                      |
| FOR 120 | ..Metal silicate or clay (252/315.5.)  |
| FOR 121 | ..Silica (252/315.6)   |
| FOR 122 | ..Alumina (252/315.7)  |
| FOR 123 | .Potential dispersants, or dispersands with colloidization inhibitants (252/318) |
| FOR 124 | .Resolving colloids or inhibiting colloidization (252/319)                       |
| FOR 125 | ..Liquid primary dispersants (252/320)   |
| FOR 126 | ...Foams or gaseous primary dispersands (252/321)                                |
| FOR 127 | ...Adsorbent or solid surface functioning treating substances (252/322)          |
| FOR 128 | ....Organic and inorganic agents (except water) (252/323)                        |
| FOR 129 | ....Inorganic agents (except water) (252/324)                                    |
| FOR 130 | ....Organic agents (252/325)   |
| FOR 131 | ...Added nongaseous dissimilar treating substances (252/326)                     |
| FOR 132 | ....Added dissimilar solvents, bindants, or liquid baths (252/327)               |
| FOR 133 | ....Resolving aqueous-petroleum or aqueous-hydrocarbon systems (252/328)         |
| FOR 134 | ....Organic and inorganic agents (except water) (252/329)                        |
| FOR 135 | ....Inorganic agents (except water) (252/330)                                    |
| FOR 136 | ....Organic agents (252/331)   |

FOR 137 .....Organic sulphony compound containing (252/332)  
 FOR 138 .....Petroleum-sulphony compound containing (252/333)  
 FOR 139 .....Organic amine, amide, or N-base containing (252/334)  
 FOR 140 .....Protein or carboxylic compound containing (252/335)  
 FOR 141 .....Organic amine, amide, or N-base containing (252/336)  
 FOR 142 .....Carbocyclic or non-aliphatic sulphony or carboxylic compound (252/337)  
 FOR 143 .....Organic amine, amide, or N-base containing (252/338)  
 FOR 144 .....With non-sulphony non-carboxylic non-amine compounds (252/339)  
 FOR 145 .....Protein or carboxylic compound containing (252/340)  
 FOR 146 .....Organic amine, amide, or N-base containing (252/341)  
 FOR 147 .....Carbocyclic or non-aliphatic carboxylic compound containing (252/342)  
 FOR 148 .....With non-carboxylic non-amine compounds (252/343)  
 FOR 149 .....Organic amine, amide, or N-base containing (252/344)  
 FOR 150 .....With elements other than C, H, and O (252/345)  
 FOR 151 ..Vaporizing, heating, or cooling (252/346)  
 FOR 152 ...With mechanical treatment (252/347)  
 FOR 153 ...With added component (252/348)  
 FOR 154 ..Mechanically (252/349)  
 FOR 155 .Gas-generating agent containing (252/350)  
 FOR 156 .Wetting, emulsifying, dispersing, or stabilizing agents (252/351)  
 FOR 157 ..Organic and inorganic agents containing (except water) (252/352)  
 FOR 158 ..Organic sulphony compound containing (252/353)  
 FOR 159 ...Protein or carboxylic compound containing (252/354)  
 FOR 160 ...Organic amine, amide, or N-base containing (252/355)  
 FOR 161 ..Protein or carboxylic compound containing (252/356)

FOR 162 ..Organic, amine, amide, or N-base containing (252/357)  
 FOR 163 .Emulsification or liquid dispersant colloidization-inhibiting, emulsion breaking or liquid dispersant colloids resolving agents (252/358)

**DIGESTS**

DIG 1 **WETTING, EMULSIFYING, DISPERSING, OR STABILIZING AGENTS (252/351)**  
 DIG 2 .Organic and inorganic agents containing (except water) (252/352)  
 DIG 3 .Organic sulphony compound containing (252/353)  
 DIG 4 ..Protein or carboxylic compound containing (252/354)  
 DIG 5 ..Organic amine, amide, or N-base containing (252/355)  
 DIG 6 .Protein or carboxylic compound containing (252/356)  
 DIG 7 .Organic amine, amide, or N-base containing (252/357)