CLASS 8, BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS

SECTION I - CLASS DEFINITION

This class takes the characters of processes set forth below, the products of such processes where not more specifically provided for, and in the specified instances, compositions used in the processes. (Also see References to Other Classes, below.)

This is the generic class for processes of and compositions for dyeing materials of any kind (subclasses 400-696), including specific treatments peculiarly related to dyeing, such as mordanting, weighting, color protecting, etc. In subclasses 400-696 the main line subclass title indicates whether the particular subclass and its indents are limited to processes, compositions, etc., or combinations of such. In instances where subject matter proper for subclasses 400-696 is combined with subject matter proper for other main classes, unless contraindicated elsewhere, if the dye steps are followed by subject matter proper for another main class the combination is classified in the other class and cross-referenced here. Dyeing steps following or simultaneous with steps proper for other classes are generally classified here.

This is the generic class for processes of and compositions for treating hides, skins, feathers and animal tissues with chemicals and fluids (see References to This Class, below).

This is the generic class for processes of bleaching materials of any kind (see References to This Class, below).

This is the generic class for processes of and compositions for improving felting properties of textile fibers, hair, fur, feathers, etc.,e.g., carroting (see References to This Class, below).

This is the generic class for the chemical modification of textiles and organic fibers and takes compositions for this purpose when not more specifically provided for elsewhere e.g., parchmentizing and mercerizing compositions (see References to This Class, below).

This is also the class for special types of processes for treating textiles and fibers with fluids even though the fluids do not chemically modify the textiles and fibers, namely: (a) plasticizing or swelling of artificial fibers whether or not combined with stretching; (b) fiber protecting during treatments provided for in this class; (c) color protecting during treatments provided for in this class); (d) cleaning and laundering (see References to This Class, below).

Manipulative processes for the treatment of textile fibers of fabrics, hides, skins and leather with chemicals and fluids for a purpose provided for in this class which are of general applicability are placed in this class, even though limited by claim terminology to a particular treatment, e.g., dyeing, bleaching, tanning, etc. (See References to This Class, below).

This class has no apparatus, per se, but where a process or product, classifiable in this class, is claimed along with claims to apparatus, the patent is placed in this class (8) and cross referenced to the appropriate apparatus class.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

For coloring of plastic materials by incorporation of coloring matter in solution or plastic composition before shaping, see the appropriate classes, e.g., Class 106; Class 252; Class 260; etc.

The printing compositions employed in this class are basically distinguished from the printing inks of Class 106, Compositions: Coating or Plastic, in that the latter are intended essentially for coating the surface of a material in patterns or designs, while in this class the coloration is produced by imbibition and absorption by or combination with the fibers of the material. Class 106 usually involves an insoluble pigment suspended in an oleaginous vehicle, while here a soluble dye in an aqueous paste is usually involved.

The rules for determining Class placement of the Original Reference (OR) for claimed chemical compositions are set forth in the Class Definition of Class 252 in the section LINES WITH OTHER CLASSES AND WITHIN THIS CLASS, subsection COMPOSITION CLASS SUPERIORITY, which includes a hierarchical ORDER OF SUPERIORITY FOR COMPOSITION CLASSES.

SECTION III - SUBCLASS REFERENCES TO THE CURRENT CLASS

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.1+, ,for processes of and compositions for treating hides, skins, feathers and animal tissues with chemicals and fluids.

101.1+, for processes of bleaching materials of any kind.

112, for processes of and compositions for improving felting properties of textile fibers, hair, fur, feathers, etc.

114, through 130, for the chemical modification of textiles and organic fibers.

130.1+, for plasticizing or swelling of artificial fibers whether or not combined with stretching.

133, fiber protecting during treatments provided for in this class.

134, for color protecting during treatments provided for in this class.

137+, for cleaning and laundering.

147+, for manipulative processes for the treatment of textile fibers of fabrics, hides, skins and leather with chemicals and fluids.

SECTION IV - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, for apparatus in general for drying or contacting solids with vapors or gases; and see Class 26, Textiles Cloth Finishing, subclass(es) 81, 92 or 106 for the combination therewith of means for expanding (e.g., stretching, spreading) running length webs of cloth.

44, Fuel and Related Compositions, subclass 59 for coloring of fuel oil.

68, Textiles: Fluid Treating Apparatus, for apparatus for treating textiles with fluids and dyes.

69, Leather Manufactures, for fur and leather working apparatus.

100, Presses, appropriate subclasses for apparatus not elsewhere provided for, for subjecting material to compressive force by causing solid surfaces to approach one another, by forcing the material through a constriction, or by tightening a flexible member about the material

100, Presses, subclasses 2+ and 35+ for processes not elsewhere provided for, for subjecting material to compressive force by causing solid surfaces to approach one another, by forcing the material through a constriction, or by tightening a flexible member about the material.

106, Compositions: Coating or Plastic, for the coloring of coating or plastic compositions in general, e.g., for the coloring of lacquers and varnishes or cellulose solutions prior to extrusion.

118, Coating Apparatus, appropriate subclasses, for apparatus for coating textiles.

134, Cleaning and Liquid Contact With Solids, for apparatus for treating solids with liquids.

134, Cleaning and Liquid Contact With Solids, which is the generic class for such subject matter, and see the SEARCH CLASS note in the class definition of Class 134 for the line with this class (8).

148, Metal Treatment, for producing a reactive coating on solid metal utilizing an organic dyestuff.

162, Paper Making and Fiber Liberation, particularly subclasses 6, 7, 64 to 67, 70+, 126, 134, and 162 for process of dyeing, bleaching or chemically purifying fibers, fibrous pulps (as distinguished from strands or continuous filaments) and undried waterlaid fibrous webs. Processes of dyeing or bleaching, which as disclosed or claimed, may be applied either to a fabric, strand, etc., (classifiable in Class 8), or a pulp or web (classifiable in Class 162) are classified in Class 8.

223, Apparel Apparatus, for apparel making apparatus.

260, Chemistry of Carbon Compounds, appropriate subclasses for dyestuffs which are new carbon compounds even though they have claimed utility as a dye. Patents containing claims to a material dyed therewith are in Class 260, except where the dyeing process is also claimed, in which case, the patent belongs in this class (8).

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 20, 73-78, and 245 for coloring or shading or employment of colored materials when combined with a significant shaping or molding operation within the class definition. Note particularly subclass 78 pertaining to dyeing or incorporating of dye susceptible materials.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, for apparatus for performing Chemical reactions.

426, Food or Edible Material: Processes, Compositions, and Products, for dyed composition, process of dyeing and dyed material all limited to an edible.

427, Coating Processes, for the application of a colored solidifiable coating to a surface. Class 427

takes the subcombination of coating of a dyed article, except where the coating is a mordant or fixing agent, a weighting agent for a textile or is reacted with a textile base to chemically modify the same. Class 8 takes the combined processes of dyeing and coating in any sequence other than mere recital of dyeing with no disclosure of how the dyeing is carried out, in the specification, nor dye materials used.

427, Coating Processes, for generic processes of coating or impregnating materials including textiles, leather, paper, etc. For a more detailed line between 427 and this class, see the reference to Class 8 in the class definition of Class 427.

428, Stock Material or Miscellaneous Articles, appropriate subclasses, for a single or plural layer web, sheet strand or fiber product, as defined therein, which may be coated or impregnated, but in which the coating or impregnant is other than a bleach, dye, chemical modifier or treatment material as provided for in this class (8).

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for dyeing steps combined with radiation imaging steps in any sequence.

435, Chemistry: Molecular Biology and Microbiology, subclasses 4+ for measuring or testing processes involving micro-organisms, cells, or tissues which may include the staining of the micro-organisms, cells, or tissues for observation purposes.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses for dyestuffs which are new carbon containing synthetic resins even though they have claimed utility as a dye. Patents containing claims to a novel dye and claims to a material dyed therewith are in Class 520, except where the dyeing process is also claimed, in which case, the patent belongs in this class (8). See Class 523, subclasses 1+ for the coloring of a synthetic resin or natural rubber composition.

SECTION V - GLOSSARY

ACID DYE

A dye containing organic acid groups, e.g., sulfonic, sulfamic, phosphoric, carboxylic, etc., or their salts. Acid dyes are commonly sodium salts of organic acids applied in an acid bath and used to dye wool, polyamide and silk. Acid dyes have the ability to be substantive to substrates with basic groups.

BASIC DYE

A basic or cationic dye will dye substrates having acidic properties, e.g., polyacrylonitrile, acid modified polyester, etc. They include diphenylmethane, triphenylmethane, xanthene, naphtroperinone, quinophthalone, quaternary ammonium group, etc., containing dyes.

CREPE

Crepe is a general classification of fabrics characterized by a broad range of crinkled or grained surface effects.

CROSS-LINKER DYE ADDITIVE

A cross-linker dye additive is a compound added to assist in dyeing which reacts chemically with both the dye and substrate, other than due to chelate formation.

DIRECT DYE

Direct dyes, also known as substantive dyes, are generally sulfonated azo compounds very similar to acid dyes in constitution, good for dyeing cellulose fibers or protein fibers.

DISAZO

Disazo for the purpose of this class is define d as a compound containing two or more azo (-N=N-) groups.

DISPERSE DYE

Disperse dyes are water-insoluble, neutral dyes applied to the substrate from a fine aqueous suspension, which were originally developed for use in dyeing of cellulose acetate and polyester materials.

DYE ADDITIVE

A dye additive or assistant is defined to be any material added to a dye to help in dyeing and is not basically a part of the dye itself.

DYEING

Is employed in this classification in its understood and accepted meaning in the art, that is to say, it denotes imparting a substantially permanent color to organic fibrous or filamentous material or other porous material by the use of substances, or preparations possessing tin-

corial properties and which are not dependent for their ability to become fixed to the base solely upon the presence of an adhesive of bindive vehicle or ingredient, as distinguished from the application of an insoluble pigment suspended in a bindive vehicle, e.g., paint or any colored coating composition where the coloring agent does not actually color the base.

FUGITIVE TINTING

Denotes the application of a temporary or easily removable coloration to a material for identification or like purpose.

HETERO ATOM

The hetero atoms are nitrogen, oxygen, sulfur, selenium, and tellurium.

HETERO RING

A hetero ring is a ring which contains only carbon and hetero atoms.

METHINE GROUP

Methine group refers to -CH=.

MORDANT DYE

Mordant dyes are dyes which require a mordant in their application and which upon combination with the mordant deposit insoluble color on the substrate, e.g., dyes with metal chelating groups.

MORDANTS

Are substances of organic or inorganic origin which combine with the coloring matter and are used to fix the same in the production of the color. For the purpose of this class, such materials as oils and sulfonated oils, soaps, fats and higher acids, are not generally considered as mordants, but as coming within the scope of "assistants" in dyeing.

OXIDATION DYE

Oxidation dyes are dyes which produce a color by oxidation on the substrate of compounds such as arylamino, hydrxyaryl, or similar compounds to produce, e.g., aniline black or diphenyl black. Nitroaniline dyes are included.

REACTIVE DYE

A reactive dye reacts chemically with a substrate having reactive -H atoms thereon, e.g., ester or ether formation with cellulose.

SOLVENT DYE

A solvent dye is a dye which si soluble in an organic solvent and is commonly introduced in the form of a solution in an organic solvent.

SULFUR DYE

Sulfur dyes contain sulfur linkages within their molecules which are produced by sulfurization, i.e., heating of organic compounds with sulfur or alkali polysulfides.

SUBSTRATE

The term substrate is used here to refer to the base material being dyed.

TEXTILE MATERIAL

As employed in this classification is limited to organic fibrous and filamentous materials, and mixed materials including same as a definite component part thereof and not in the popular sense to include all materials, e.g., it does not include asbestos and glass fibers adapted to be felted, woven or knitted not glass fiber fabric. In the dyeing subclasses (400-696) paper has been grouped with the textile materials.

VAT DYE

Vat dyes are dyes which are applied to the substrate in reduced, soluble form and then oxidize to the original insoluble pigment. Common vat dyes are quinonic dyes and particularly common are anthraquinones and indigoids.

SUBCLASSES

94.1 TREATMENT OF HIDES, SKINS, FEATHERS AND ANIMAL TISSUES: Processes of treating hides, skins, feathers, and other animal tissues with chemicals or fluid and the resulting products not otherwise provided for.

(1) Note. This and indented subclasses also include the compositions used in the processes provided for and the resulting product unless otherwise provided for.

(2) Note. For compositions of matter including hides, skins, feathers, or animal tissues, see the appropriate composition class, particularly Class 71, Chemistry: Fertilizers, subclass 18; Class 106, Compositions: Coating, or Plastic, subclasses 124.4+, 124.6+, 124.7, and 124.8+; Class 524, Synthetic Resins or Natural Rubbers, subclasses 9+.

(3) Note. Class 34, Drying and Gas or Vapor Contact With Solids, subclasses 280+, is the generic class for the treatment of feathers and will take all treatments of feathers not otherwise provided for. The line between Class 34, subclasses 280+ and this subclass is as follows: Class 34, subclasses 280+ takes (1) the drying of feathers, (2) nonreactive gas or vapor contact of feathers and (3) any other treatment of feathers not elsewhere provided for; this subclass takes the treatment of feathers with chemicals or fluids except (1) and (2) above. See the notes to Class 34, subclasses 280+ for feather treatments provided for elsewhere.

(4) Note. Apparatus used in carrying out the processes of this and indented subclasses are in Class 69, Leather Manufactures, subclasses 28 and 29+, unless more specifically provided for elsewhere.

SEE OR SEARCH THIS CLASS, SUBCLASS:

101+, for the bleaching of hides, skins, feathers and animal tissues.

137+, and 147+, for washing, cleaning and manipulative processes of treating furs, skins and leather with a chemical or fluid.

404+, for the dyeing of hides, hair, furs, and feathers.

SEE OR SEARCH CLASS:

27, Undertaking, appropriate subclasses, particularly subclasses 22.1+ for the treatment of dead bodies of persons for preparation for burial.

34, Drying and Gas or Vapor Contact With Solids, subclasses 280+ (see Note 3).

69, Leather Manufactures, subclass 21 and 22 for processes of treating hides, skins, fur or leather which do not involve the use of chemicals or a fluid, and are not more specifically provided for elsewhere and for processes of fluid treatment combined with some other mechanical working or nonfluid treatment of leather.

71, Chemistry: Fertilizers, subclass 18 (see Note 2).

106, Compositions: Coating or Plastic, appropriate subclass and the notes thereto for compositions for coating of hides, skins, feathers, or animal tissues which form adherent fibers upon the base coated. Coating compositions which react with the hides, skins, feathers or animal tissues coated are classified in this or indented subclasses (see Note 2).

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compostions, subclass 692 for electrolytic treatment of hides or skins.

252, Compositions, subclass 8.57 for compositions for treating tanned hides and skins and for treating furs.

260, Chemistry of Carbon Compounds, appropriate subclasses, for new carbon compounds and processes of preparing them, even though claimed as hide, skin, leather, feather, or animal tissue treating agents (see Note 2).

424, Drug, Bio-Affecting and Body Treating Compositions, subclass 75 for a composition used to preserve and/or improve the appearance of a corpse for preparation for burial other than depilatories.

427, Coating Processes, appropriate subclasses, especially subclasses 323, 389, and 412, for processes of forming and adherent skin coating on a proteinaceous base. This and indented subclasses provide for treating hides, skins, feather, and animal tissue with coating type materials where the material is not used in such amounts as to produce a skin coating but only impregnates the base and the purpose of the impregnation is not to waterproof. Waterproofing by impregnation

is in Class 427. Combinations of reactive fluid treatments of tanning and coating are in Class 8.

428, Stock Material or Miscellaneous Articles, appropriate subclasses, especially subclass 6 for a treated, embellished or simulated feather or group of feathers, and subclass 473, for a plural layer product including a layer of leather, not elsewhere provided for.

434, Education, and Demonstration, subclasses 295+ for processes of preparation of biological specimens, and taxidermy and compositions used in such processes.

435, Chemistry: Molecular Biology and Microbiology, subclasses 265+ for processes of treating hides, skins, feathers and animal tissues that include fermentative action and products of such processes not otherwise provided for.

452, Butchering, for the preparation of a carcass for food, particularly subclasses 71+ for removal of hair, feathers, or fish scales and subclasses 125+ for the removal of skin.

94.11 Internal tissues:

This subclass is indented under subclass 94.1. Processes for the treatment of subcutaneous or internal tissues of animals, fowls, fish or reptiles.

(1) Note. Many of the patents in this subclass are directed to methods for the production of sutures, tennis racquet strings and the like, from gut.

SEE OR SEARCH CLASS:

426, Food or Edible Material: Processes, Compositions, and Products, subclass 140 for edible containers, animal de- rived and subclasses 276+ for processes of making same.

606, Surgery, subclasses 228+ for surgical sutures and ligatures.

94.12 Fish or reptile skins:

This subclass is indented under subclass 94.1. Processes for the treatment of fish or reptile skins.

94.13 Suede:

This subclass is indented under subclass 94.1. Processes directed to the production of suede leather.

(1) Note. By "suede" is meant leather in which the grain of outermost surface has been removed leaving a surface having small free fibers projecting therefrom.

SEE OR SEARCH CLASS:

69, Leather Manufactures, subclasses 9+ for apparatus for, and subclass 21 for process of, skiving and splitting leather.

94.14 Fur:

This subclass is indented under subclass 94.1. Processes directed to the treatment of fur.

(1) Note. "Fur", as used herein, means the soft fine fibrous coat covering the skins of many animals and commonly known as fur as distinguished from hair.

(2) Note. Fluid treatments of hides and skins having the fur thereon are not classified in this subclass, unless the treatment is for the purpose of treating the fur fibers. For the fluid treatment of furred skins, such as tanning, etc., which are not for the purpose of treating the fur fiber itself, see the appropriate subclasses below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.16, for a process of removing fur from a hide provided for in this class.

112, for the improving of the felting properties (i.e., carroting).

128, for the chemical modification of (a) animal fibers which are in the free state, i.e., detached from the skin upon which they occur, or (b) fabrics made from such fibers.

137+, for cleaning or laundering of furs.

147+, for fluid treatment (i.e., manipulative) of hides, skins, and leather with fluids.

404+, for the dyeing of furs.

94.15 Treatment of untanned skins or hides:
This subclass is indented under subclass 94.1. Processes directed to the treatment of untanned skins or hides.

(1) Note. Processes of tanning hides and skins, and treatment with materials which chemically react with the hide are in subclasses 94.19+, unless combined with some other fluid treatment of the untanned hide, or skin, provided for in subclasses 94.15+.

(2) Note. Processes included herein may be preparatory to or combined with the subsequent step of tanning the hide or skin. Such combined processes are cross referenced below in the appropriate subclass for the tanning step if desired. Combination of a significant tanning step and a step preparatory there to, such as dehairing, bating, etc., wherein the preparatory step is broadly included or no significant aspects or characteristics of the preparatory step are set forth in the claims are classified below on the basis of the tanning step.

SEE OR SEARCH CLASS:
424, Drug, Bio-Affecting and Body Treating Compositions, for insecticidal, fungicidal, germicidal and disinfectant compositions for use as a hide or skin saturant.

94.16 Depilating:
This subclass is indented under subclass 94.15. Processes for treating a hide or skin for the purpose of removing the hair therefrom.

(1) Note. This and indented subclasses are the generic location for depilating processes and compostitons and take all such processes except those specifically placed elsewhere as set forth under "SEARCH CLASS" below.

(2) Note. The combination of a significant tanning step and a depilating step preparatory thereto, wherein the depilating step is broadly recited and no significant aspects of the depilating step are claimed, is classified below on the basis of the tanning step.

SEE OR SEARCH CLASS:
19, Textiles: Fiber Preparation, subclasses 2+ for the mechanical liberation of animal fibers from their source for the purpose of preparing the fibers for textile use.
27, Undertaking, for a method of depilating a corpse combined with other undertaking steps.
30, Cutlery, for a cutting implement useful in removing hair from the skin or body, particularly subclasses 32+ for razors.
69, Leather Manufactures, for apparatus and process for depilating a hide to be made into leather which does not involve the use of chemicals or fluids (e.g., cutting, plucking) and for a process of depilation using chemicals or fluid combined with other mechanical steps of leather working or treatment.
83, Cutting, subclasses 13+ for a process of removing hair from the skin of a human or animal by cutting (e.g., shaving, etc.).
435, Chemistry: Molecular Biology and Microbiology, subclass 265 for depilating compositions and processes involving fermentation.
451, Abrading, particularly subclasses 523 through 525 and subclasses 526+ for the removal of hair by abrasion.
452, Butchering, subclasses 71+ for a process of depilating combined with other nondepilatory steps of preparing fowl and animal carcasses for use as food and depilating apparatus for preparing fowl and animal carcasses for food.
606, Surgery, subclass 44 for electrical needles useful for depilating the living human body, subclasses 133+ for miscellaneous depilating apparatus used on living humans not specifically provided for elsewhere.

94.17 Alkaline material removal:
This subclass is indented under subclass 94.15. Processes for the treatment of hides and skins, for the purpose of removing or neutralizing the alkaline material therefrom.

(1) Note. Most of the patents in this subclass are directed to the removal or neutralization of lime or other alkaline material used in the depilating process.

SEE OR SEARCH CLASS:
252, Compositions, subclass 193 for alkali or base bindant containing compositions.
435, Chemistry: Molecular Biology and Microbiology, subclass 265 for "bating" or other treatments of hides for removal of lime or other alkaline material by processes involving fermentation and the composition used in such processes.

94.18 With organic material:
This subclass is indented under subclass 94.15. Processes for the treatment of hides and skins in which an organic material is employed.

(1) Note. The term "organic material" as used herein means a material within the main Class definition of Class 260, Chemistry of Carbon Compounds.

94.19 Tanning:
This subclass is indented under subclass 94.1. Processes , directed to the tanning of hides and skins to produce leather.

(1) Note. The term "tanning" as used means the chemical reaction of the protein of the hide or skin with another material to produce an insoluble compound, includes all such reaction such as with alum, commonly known as "tawing".

SEE OR SEARCH THIS CLASS, SUBCLASS:
404+, for tanning combined with dyeing.

SEE OR SEARCH CLASS:
560, Organic Compounds, subclasses 68 and 69 for tanning materials which are new chemical compounds, reaction products or extracts.

94.2 With subsequent treatment:
This subclass is indented under subclass 94.19. Processes including a significant treatment of the tanned hide or skin subsequent to the tanning.

(1) Note. This subclass includes process of tanning combined with a subsequent fluid treatment of the leather as well as a fluid treatment of leather, per se, where not otherwise provided for.

SEE OR SEARCH THIS CLASS, SUBCLASS:
101+, for the bleaching of leather.
436+, for the dyeing of leather.

SEE OR SEARCH CLASS:
69, Leather Manufactures, subclass 21 for processes of treating and working leather not involving a treatment with a fluid, and nonreactive fluid treatment combined with the mechanical working or nonfluid treatment of leather.
252, Compositions, subclass 8.57 and the notes thereto, for compositions used in treating leather.
427, Coating Processes, particularly subclasses 323, 389 and 412 for processes of coating a proteinaceous base. The line between Class 427 and this class with respect to the treatment of leather with fluids and chemicals is as follows: Class 427 takes the treatment of leather which results in skin coating on the leather; this and the indented subclasses take (1) treatment with a material which chemically reacts with the leather treated and (2) treatment with nonreactive fluids which do not result in the production of a solid, adherent skin coating. This and indented subclasses include the treatment of leather with material which is capable of forming skin coatings when the materials are not used in such amounts as to produce a skin coating but only to impregnate or become absorbed in the leather. Class 427 also takes combinations of fluid treatments of hides, skins, or leather combined with the subsequent coating

of the leather except where the said fluid treatment results in the chemical modification of the hide, skin, or leather (e.g., tanning).

94.21 Organic material:
This subclass is indented under subclass 94.2. Processes in which the subsequent treatment of the leather includes the use of an organic material.

(1) Note. See Note (1) to the definition of subclass 94.18.

94.22 Fat, fatty oil, fatty oil acid or salt thereof:
This subclass is indented under subclass 94.21. Processes in which the subsequent treatment of the leather includes the use of a fat, fatty oil, fatty oil acid or salt thereof.

(1) Note. Processes of fat liquoring leather are found herein.

94.23 Emulsions:
This subclass is indented under subclass 94.22. Processes in which the subsequent treatment of the leather includes the use of an emulsion containing fat, fatty oil, fatty oil acid or salt thereof.

94.24 With aldehyde-aromatic condensation product:
This subclass is indented under subclass 94.19. Processes of tanning in which the tanning agent used contains condensation product of an aldehyde and an aromatic compound.

(1) Note. The use of the materials known as "syntans" are classified herein.

94.25 With heavy metal compound:
This subclass is indented under subclass 94.19. Processes or tanning in which the tanning agent contains a compound of a heavy metal.

(1) Note. The term "heavy metal" as used here means a metal having a specific gravity greater than four.

94.26 With organic material:
This subclass is indented under subclass 94.25. Processes of tanning in which the tanning agent contains an organic material in addition to a heavy metal.

(1) Note. See Note (1) to the definition of subclass 94.18.

(2) Note. The organic material may be an organic compound of the heavy metal or a mixture of an organic compound and a heavy metal compound or the organic material and heavy metal compound may be used in any sequence.

94.27 Chromium compound:
This subclass is indented under subclass 94.25. Processes of tanning in which the heavy metal compound contains chromium.

94.28 Iron compound:
This subclass is indented under subclass 94.25. Processes of tanning in which the heavy metal compound contains iron.

94.29 With aluminum compound:
This subclass is indented under subclass 94.19. Processes of tanning in which the tanning agent contains a compound of aluminum.

(1) Note. In this and the indented subclass are placed processes of tanning with alum, commonly known as "tawing".

94.3 With vegetable extract:
This subclass is indented under subclass 94.29. Processes of tanning in which the tanning agent contains a vegetable extract.

94.31 With cellulose liberation liquor:
This subclass is indented under subclass 94.19. Processes of tanning in which the tanning agents contain a waste liquor from a process of liberating cellulose from its natural source.

(1) Note. This subclass includes tanning processes employing a liquor, or solution of the residue from the sulfate, sulfite, or soda process of liberating cellulose.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, subclasses 123.11+ and the notes thereto, for other compositions containing cellulose liberation liquors.

530, Chemistry: Natural Resins or Derivatives; Peptides or Proteins; Lignins or Reaction Products Thereof, subclasses 500+ for such residues and reaction products, per se.

94.32 With vegetable extract:

This subclass is indented under subclass 94.19. Processes of tanning in which the tanning agent contains a vegetable extract.

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.3, for tanning processes in which vegetable extracts are used with aluminum compounds.

SEE OR SEARCH CLASS:

560, Organic Compounds, subclasses 68 and 69 for vegetable tanning extracts, per se, and processes of making the same.

94.33 With organic material:

This subclass is indented under subclass 94.19. Processes of tanning in which the tanning agent contains an organic material.

(1) Note. See Note (1) to the definition of subclass 94.18.

101 BLEACHING:

Processes for bleaching or decolorizing textile filaments, strands, yarns, or fabrics not elsewhere provided for.

(1) Note. Manipulative processes not restricted in their applicability to bleaching, although bleaching may appear in the claims are classified in subclasses 147+.

(2) Note. Bleaching in combination with performing some other treatment on the material is in subclasses 101+, unless elsewhere provided for. Bowking of vegetable fibers or the scouring of other fibers is found in subclasses 101+ and is not cross referenced to subclass 139, except for specific novelty in the bowking or scouring step.

SEE OR SEARCH THIS CLASS, SUBCLASS:

107+, for bleaching by definite named chemicals.

137+, for bleaching as a step incidental to a cleaning or laundering operation.

648, and the notes thereto, for the bluing of textiles and compositions therefor.

SEE OR SEARCH CLASS:

68, Textiles: Fluid Treating Apparatus, for apparatus for bleaching textile fibers and fabrics.

132, Toilet, subclass 208 for a method of bleaching live human hair on the scalp which is more than the mere application of a composition.

134, Cleaning and Liquid Contact With Solids, for nonelectrolytic processes of bleaching metal, siliceous and calcareous bases.

162, Paper Making and Fiber Liberation, particularly subclasses 6, 7, 64 to 67, and 70+ for bleaching and chemically purifying of fibers or fibrous pulps (as distinguished from continuous filaments or strands, etc.) or undried waterlaid fibrous webs.

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compostions, subclass 690 for bleaching of fibrous organic material involving electrolysis.

252, Compositions, subclasses 186.1+ and 188.1+ for bleaching compositions in general and subclasses 189 to 193 for compositions for neutralizing the acidity or alkalinity of a previous bleaching or laundering operation. Claims in the form of a process consisting in the mere application of a novel composition are not regarded as process for the purpose of subclasses 101+, but are placed in Class 252.

424, Drug, Bio-Affecting and Body Treating Compositions, subclass 62 for a bleaching composition intended for use on the living body (e.g., living hair).

426, Food, or Edible Material: Processes, Compositions, and Products, for pertinent subclass(es) as determined by schedule review.

102 Color stripping or subduing:
This subclass is indented under subclass 101. Inventions directed to the removal or lightening of the shade or tone of a previously applied dye without complete removal of dyestuffs and artificial coloring matters from materials.

SEE OR SEARCH THIS CLASS, SUBCLASS:
102, for color stripping by discharging.
438+, 440, and 646, for extraction and recovery of dyes.

SEE OR SEARCH CLASS:
162, Paper Making and Fiber Liberation, subclasses 4+ for processes of defibering waste paper or textile waste including the removal of color bodies, e.g., de-inking and repulping of newsprint.

103 Wave energy:
This subclass is indented under subclass 101. Processes wherein the bleaching is accomplished by other than chemical agents, such as, light, high frequency vibrations or other wave energy.

(1) Note. The combined use of wave energy and chemical agents is placed in this subclass and cross referenced below where there is novelty in the chemical agent.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107+, for the use of electrical energy in a chemical bath for the purpose of liberating a chemical bleaching agent in gaseous or other state.
111, for processes employing ozone.

SEE OR SEARCH CLASS:
250, Radiant Energy, subclass 428 for fluent material containment support or transfer means with or without a radiation source, subclass 493.1 for radiant energy generation and radioactive sources, and subclasses 492.1+ for the irradiation of objects and materials.
378, X-Ray or Gamma Ray Systems or Devices, subclasses 64+ for X-ray irradiation.

107 Chemical:
This subclass is indented under subclass 101. Processes wherein the bleaching is accomplished by means of definitely specified chemical agents or combinations of chemical agents.

108.1 Chlorine:
This subclass is indented under subclass 107. Subject matter wherein chlorine in any state or compound containing active chlorine are employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111, for processes employing chlorates or perchlorates.

109 With sulfur compounds or peroxides or oxygen:
This subclass is indented under subclass 108.1. Processes in which sulfur compounds or oxygen or oxygen releasing compounds are employed in addition to chlorine.

110 Sulfur compounds:
This subclass is indented under subclass 107. Processes for bleaching by means of sulfur compounds, such as SO2+, sulfites, hydrosulfites, sulfoxylates, etc.

111 Peroxides or oxygen:
This subclass is indented under subclass 107. Processes for bleaching with oxygen or ozone or compounds releasing oxygen such as peroxides, perborates, per sulfates, and perchlorates. The use of air as an inert gas rather than as active bleaching agent is excluded.

112 IMPROVING FELTING PROPERTIES (E.G., CARROTING):
The treatment of hair, fur and other fibrous materials as a step preparatory to felting the same so as to improve their felting properties, often known as carroting in the case of hair and fur.

SEE OR SEARCH THIS CLASS, SUBCLASS:
116.1+, and 127.5+, for chemical modification generally of cellulosic and proteinaceous fibers, respectively.

SEE OR SEARCH CLASS:

19, Textiles: Fiber Preparation, subclass 66 for fluid treatment combined with the textile processes provided for therein.

26, Textiles: Clothing Finishing, subclass 19 for fulling of fabrics utilizing a fluid treatment.

28, Textiles: Manufacturing, subclass 123 for felting of fibers, utilizing a fluid.

68, Textiles: Fluid Treating Apparatus, for fluid treating apparatus, in general, applied to textiles.

69, Leather Manufactures, subclass 28 for fur treating apparatus.

114 ORNAMENTAL EFFECTS:

Processes for treating textiles with chemicals or special fluids, e.g., swelling agents, to produce ornamental effects, such as, for example, patterns, designs or contrasting areas.

(1) Note. The particular effective agent is cross referenced to an appropriate subclass below.

SEE OR SEARCH CLASS:

26, Textiles: Cloth Finishing, subclasses 16, 30 and 69, for the production of ornamental effects on cloth by mechanical operations.

427, Coating Processes, subclasses 256+ for processes of producing a nonuniform coating which may result in an ornamental effect.

114.5 Differential creping:

This subclass is indented under subclass 114. Processes for fluid or chemical treatment of yarns and fabrics having yarns or areas of different physical or chemical characteristics, to produce crepe effects thereon.

(1) Note. This subclass includes the treatment of fabrics or yarns yarns composed of mixed natural and/or artificial fibers or which have been differentially treated with chemical agents or resists, whereby the textile material is selectively affected by the shrinking or treating agent.

SEE OR SEARCH THIS CLASS, SUBCLASS:

117, for the production of wool-like or crinkle effects on unmixed vegetable fibers.

130.1+, for swelling or shrinking of artificial fibers to produce similar effects.

114.6 With fiber destruction or removal:

This subclass is indented under subclass 114. Processes which include the destruction or removal of a portion of the textile.

SEE OR SEARCH THIS CLASS, SUBCLASS:

140, for processes of removing impurities from textiles by destruction thereof.

SEE OR SEARCH CLASS:

28, Textiles: Manufacturing, subclass 164 for processes of ornamentation by sewing combined with the destruction or removal of material, and subclass 168 for the combination of a significantly recited textile operation and the step of destroying or removing a portion of the textile product.

112, Sewing, subclass 403 for a sewn web or sheet including a decomposable thread or component.

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 668 for a process of etching or dissolving in general.

115 With local treatment:

This subclass is indented under subclass 114. Processes wherein the ornamental effects are produced by applying the chemical reagent in local areas by means of stencils or other means to confine the treatment to localized areas.

SEE OR SEARCH THIS CLASS, SUBCLASS:

114.5, for creping process.

114.6, for processes which include fiber destruction.

478, for similar processes including a coloring step.

115.51 CHEMICAL MODIFICATION OF TEXTILES OR FIBERS OR PRODUCTS THEREOF:

Processes for treating textiles, fibers, fabrics fibrous of filamentary materials, cloth, gauze, etc., (herein referred to as "materials") to affect a chemical modification thereof.

(1) Note. Subclasses 115.51+ includes processes or products thereof modifying the chemical or physicochemical properties of "materials", i.e., the "materials" are acted upon by a chemical or other agent as distinguished from the mere coating, impregnating, precipitation of a substance within the "materials" structure which are classified in Class 427. Excluded from here also are those processes or products thereof which are concerned with the coating, impregnation of precipitation by an in situ chemical reaction which does not chemically involve the substrate "material". Also found here are those chemical effects on a component normally associated with a "material", for example, sericin of silk.

(2) Note. The chemical modification of paper is classified here because of its similarity to other cellulosic "materials".

(3) Note. In the case of coating or impregnating processes or products thereof, where doubt exists as to whether or not a chemical modification has occurred, the process or product thereof is classified in Class 427 and generally cross-referenced to this class, subclass 115.51.

(4) Note. The chemical modification of a substance other than a textile or fiber with subsequent processing to produce a textile, fiber, web, etc., is not classified here. For example, the chemical modification of polyvinyl chloride with subsequent fiber formation with no claimed structure of characteristics is in Class 525.

(5) Note. The heat treating of "materials", e.g., to produce carbon fiber precursors, is properly classified here despite the lack of a chemical agent since the chemical nature of composition of the "material" was altered.

(6) Note. Patents claiming a product derived from chemically modified "material" are classified on the basis of the process for chemically modifying the "material".

SEE OR SEARCH THIS CLASS, SUBCLASS:

114+, for processes including chemical modification of the "material" which produces and ornamental effect.

SEE OR SEARCH CLASS:

162, Paper Making and Fiber Liberation, subclasses 157.1+ which utilizes fibers (including those chemically modified) in paper making processes.

252, Compositions, subclasses 8.61+ for durable finishes for textile materials, including antistatic and textile softening compositions, and subclasses 8.81+ for textile processing aid compositions, such as lubricants.

260, Chemistry of Carbon Compounds, and its daughter classes appropriate subclasses for the preparation of carbon compounds employing fibers or other "materials" as a reactant whether or not its composition is known, in which the fiber or other material reactant and/or product has no claimed structure of characteristics.

423, Chemistry of Inorganic Compounds, subclass 447.1 in which the chemical modification results in a "material" of substantially pure carbon.

427, Coating Processes, for coating processes which do not modify the chemical or physicochemical properties of textiles and fibers.

428, Stock Material of Miscellaneous Articles, for a "material" obtained by a Class 8 process and whose structure or characteristics meet the required definition for that class.

510, Cleaning Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, subclasses 515+ for nondurable antistatic compositions used in the course of a laundering

operation or in a finishing step, such as rinsing or drying, accompanying laundering.

115.52 Using wave energy, electrostatic field or electrical discharge:
This subclass is indented under subclass 115.51. Subject matter wherein the chemical modification is affected wholly or in part due to a wave-type energy, electrostatic field or a field in which electrical discharging occurs.

(1) Note. This subclass includes processes wherein the chemical modification occurs solely through the use of the wave energy, electrostatic field or an electrical discharge. Also found here are those processes which utilize in additional chemical reactant. For example, a textile fiber is treated with an activated monomer which has been previously activated by ultraviolet radiation, etc.

115.53 Ultraviolet radiation:
This subclass is indented under subclass 115. Subject matter, 52 wherein the radiation used to affect a chemical change is in the ultraviolet range, that is, generally 180-3,900 angstrom units; far ultraviolet is in the range of 180-2,900 angstrom units while near ultraviolet is in the range of 2,900-3,900 angstrom units.

115.54 Treating textiles or fibers from synthetic resin or natural rubber with chemical reactant and products thereof:
This subclass is indented under subclass 115.51. Subject matter wherein the "material" is treated with a chemical agent.

(1) Note. The final product need not contain an atom of the chemical treating agent employed, for example, processes such as the oxidation of halogenation of "materials" may have involved the conversion or removal of may not contain an atom used in these conversions.

(2) Note. The chemical agent employed in the treating process may be a mixture, of more than one reactant or materials which produce an in situ reactant. Classification of a mixture of reactants is based on that first appearing in the schedule. Inert ingredients such as solvents, fillers, substrate support, etc., are not the basis for classification here.

115.55 Single fiber or filament containing more than one synthetic organic polymer:
This subclass is indented under subclass 115.54. Subject matter wherein the fiber or filament that is being chemically treated is one which has been derived from a blend of two or more synthetic organic polymers, e.g., a single fiber formed from a blend of 85 percent polystyrene and 15 percent polybutadiene, etc.

115.56 Organic chemical reactant:
This subclass is indented under subclass 115.54. Subject matter wherein the chemical treating agent is an organic compound.

(1) Note. An organic compound is defined as one which has carbon therein and which is further characterized by the presence in a molecule of (a) carbon-to-carbon bond, or (b) carbon-to-hydrogen or carbon-to-halogen bond, or (c) carbon-to-nitrogen bond, with proviso that hydrocyanic acid, cyanogen, isocyanic acid, cyanamide, cyanogen halides, isothiocyanic acid, and metal carbides are excluded as being organic compounds.

115.57 Reactant contains heterocycle:
This subclass is indented under subclass 115.56. Subject matter wherein the chemical reactant contains a heterocyclic group, elg., ethylene sulfide, etc.

(1) Note. The term heterocyclic denotes the presence off a covalently bound ring whose members are composed of at least one carbon atom and one or more atoms of the elements selected from the group consisting of nitrogen, oxygen, sulfur, selenium, and tellurium.

115.58 Reactant contains nitrogen heterocycle:
This subclass is indented under subclass 115.57. Subject matter wherein the heterocyclic reactant contains at least one nitrogen atom in the ring, e.g., axiridine, pyrrole, etc.

115.59 Contains six-membered nitrogen heterocycle:
This subclass is indented under subclass 115.58. Subject matter wherein the chemical reactant contains a six-membered nitrogen heterocyclic ring, e.g., pyridine, piperidine, etc.

115.6 With coating, sizing, or lubricating:
This subclass is indented under subclass 115.5. Processes which in addition to the chemical modification of the textile material includes a coating, sizing or lubricating step or treatment.

SEE OR SEARCH CLASS:
427, Coating Processes, for coating processes, per se.

115.61 Reactant contains oxygen heterocycle:
This subclass is indented under subclass 115.57. Subject matter wherein the chemical reactant contains an oxygen heterocyclic ring, e.g., epichlorohydrin, etc.

(1) Note. Reactant such as polyethylene oxide, polypropylene oxide, etc., are devoid of the oxygen ring and therefore not classified here. However, the polymer from the diglycidyl ether of bisphenol A contains residual epoxy groups and would be classified here.

115.62 Reactant contains nonaromatic carbon-carbon double bond:
Reactant contains nonaromatic carbon-carbon double bond, e.g., acrylic acid, styrene, butadiene, etc.

(1) Note. The term aromatic denotes a compound which contains the benzene nucleus whether or not it is condensed with other rings, e.g., naphthalene, anthracene, etc.

115.63 Reactant containing nonaromatic carbon-carbon double bond also contains sulfur atom:
This subclass is indented under subclass 115.62. Subject matter wherein the reactant containing the nonaromatic carbon-carbon double bond also contains a sulfur atom, e.g., divinyl sulfone, p-styrene sulfonic acid, etc.

115.64 Organic reactant contains element other than C, H, O, N, or S:
This subclass is indented under subclass 115.56. Subject matter wherein the organic reactant contains an element other than C, H, O, N or S, e.g., 2-chloroethyl phophite, etc.

115.65 Organic reactant contains nitrogen:
This subclass is indented under subclass 115.56. Subject matter wherein the organic reactant contains a nitrogen atom, e.g., ethylene diamine, triethanolamine, etc.

115.66 Organic reactant contains plural nitrogen atoms nonbonded to each other:
This subclass is indented under subclass 115.65. Subject matter wherein the organic reactant's plural nitrogen atoms are nonbonded to each other, e.g., ethylene diamine tetraacetic acid, urea, etc.

(1) Note. Where a reaction concerns the in situ generation of a primary reactant, e.g., the conversion of an acyl azide (R-C(=O)N=N=N) to an isocyanate (R-N=C=O), classification is based on the primary reactant azide. Where the structure of either the primary or secondary reactant is doubtful or indeterminate, classify accordingly.

115.67 Reactant contains isocyanate group:
This subclass is indented under subclass 115.65. Subject matter wherein the reactant contains an isocyanate, p-phenylene dilsocyanate, etc.

115.68 Inorganic nongaseous chemical reactant:
This subclass is indented under subclass 115.54. Subject matter wherein the reactant is an inorganic nongaseous material, e.g., phophoric acid, sulfuric acid, etc.

(1) Note. A nongaseous material is defined as one which is normally nongaseous under ambient conditions but not necessarily be so under conditions in which it is being reacted with the “material”. See (2) Note below. Where doubt exists as to its state under ambient conditions the material is classified as being nongaseous.

(2) Note. To be classified as a gaseous material it would have to come in direct contact with the "material", i.e., the gas may not be in solution microencapsulated, prepackaged, etc.

115.69 Oxidizing or alkaline agent:
This subclass is indented under subclass 115.68. Subject matter wherein the inorganic nongaseous reactant is an oxidizing or alkaline agent, e.g., sodium hypochlorite, calcium hypochlorite, hydrogen peroxide, potassium hydroxide, etc.

(1) Note. Patents which recite the use of organic precursors, e.g., an N-chloriso-cyanurate, etc., for producing an in situ-generated inorganic oxidizing agents e.g., hypochlorous acid, etc., will be classified with in situ generated inorganic material and cross-referenced to the organic material.

115.7 Mixed fibers:
This subclass is indented under subclass 115.5. Processes wherein the textile or fibrous material is made up of fibers of different chemical constitution.

(1) Note. Natural vegetable fibers and regenerated or mercerized cellulose are not considered chemically different for the purpose of this subclass.

116.1 Cellulose fibers:
This subclass is indented under subclass 115.5. Subject matter wherein cellulose fibers are subjected to a chemical modification.

(1) Note. Included herein are for instance chemical modification to increase tensile strength, impart luster, remove nap, shrinking, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
112, for improving felting properties.
129+, for chemically treating a cellulose ester or ether fiber.

SEE OR SEARCH CLASS:
26, Textiles: Cloth Finishing, subclasses 18.5+ for mechanical processes of shrinking.

116.4 Treatment with aldehyde or ketone:
This subclass is indented under subclass 116.1. Processes wherein the cellulose base is chemically modified by an aldehyde or ketone or substance liberating the same.

(1) Note. Where methylol compounds are employed for coating purposes and no chemical modification is stated to take place or apparently does so, the patents are placed in Class 427, Coating Processes.

117 Wool-like or crinkle effects:
This subclass is indented under subclass 116.1. Processes for treating cellulose fibrous material or fabric with agents to impart the chemical properties of wool thereto or with acid or alkaline gelatinizing or shrinking agents without tension, so as to cause the same to curl up and take on the physical appearance of wool; it usually also affects the chemical properties of the fabrics so that the same may more or less have the chemical properties of wool.

SEE OR SEARCH THIS CLASS, SUBCLASS:
112, for improving felting properties.

118 Transparent, parchmentized, or linen finish:
This subclass is indented under subclass 116.1. Processes and compositions wherein cellulose fibrous material or paper is subjected to a treatment with gelatinizing or swelling agent, such as $ZnC1_2$, H_2SO_4, etc., to impart a parchment-like, linen, transparent or translucent finish thereto. This may result in an increased resistance to water or grease and the like. The fabric generally becomes stiff or transparent. However, softening agents may be included as part of the process. The material may be previously or subsequently mercerized by means of alkali metal hydroxides or the like. So-called "organdie" effects and the delustering or relustering of these materials by a gelatinization process is included herein. The selvaging of the edges of a fabric to prevent raveling, by the process herein defined, is also included.

SEE OR SEARCH THIS CLASS, SUBCLASS:
125+, for mercerizing or alkaline treatment.

SEE OR SEARCH CLASS:
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 76 for fabric parchmentizing and laminating.
427, Coating Processes, appropriate subclasses for processes of coating fabrics in general.

119 Paper:
This subclass is indented under subclass 118. Inventions wherein paper is the base treated.

120 Esterifying, etherifying or immunizing:
This subclass is indented under subclass 116.1. Processes for the treat- ment of cellulose fibers and fabrics so as to form chemical derivatives thereof, such as ethers, esters, etc., without entirely destroying the structure of the fibers. The materials so treated generally lose the dyeing characteristics and affinity for the usual cotton dyes and may take on an affinity for dyes usually employed for animal fibers and cellulose ethers or esters.

SEE OR SEARCH THIS CLASS, SUBCLASS:
117, for the production of wool-like or crinkle effects.
181+, for immunizing with nitrogenous organic compounds.

SEE OR SEARCH CLASS:
536, Organic Compounds, subclasses 32+, 43+, 58+, and 84+ for the complete dissolution of cellulosic material and its regeneration.

121 Acetylation:
This subclass is indented under subclass 120. Processes wherein the treatment is by means of an acetylating agent.

SEE OR SEARCH CLASS:
536, Organic Compounds, subclasses 69+ for the acetylation of cellulose.

122 Xanthogenation:
This subclass is indented under subclass 120. Processes wherein the treatment is by means of agents capable of forming xanthates such as carbon disulfide and alkali.

SEE OR SEARCH THIS CLASS, SUBCLASS:
121, for the acetylation of xanthogenated fibers.

SEE OR SEARCH CLASS:
536, Organic Compounds, subclasses 60+ for cellulose xanthates.

123 Cuprammonium treatment:
This subclass is indented under subclass 116.1. Processes for the treatment of cellulose fibers or fabrics by means of a cuprammonium solution which incompletely dissolves the surface of the cellulosic fibers and may be reprecipitated or regenerated thereon; which solution may also contain added cellulose therein.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, subclass 167.01 for cuprammonium cellulose.

125 Mercerizing or alkaline treatment:
This subclass is indented under subclass 116.1. Processes and compositions for the mercerization or alkaline treatment of threads or fabrics with or without stretching usually by means of caustic lye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
115, for the production of local effects by a mercerizing treatment.
147+, for manipulative processes.
537, for combined mercerizing and dyeing.

127 Wetting addition or pretreatment:
This subclass is indented under subclass 125. Inventions wherein the textile material is pretreated with an agent to increase the wetting or penetrating capacity of the mercerizing or alkaline liquor, or such an agent is added to the mercerizing or alkaline bath.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 198+ for wetting agents (e.g., spreading, penetrating, leveling) or making such agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

127.1 Treatment with phosphorus containing material:

This subclass is indented under subclass 116.1. Subject matter wherein a phosphorus containing material is utilized.

127.5 Proteinaceous fibers:

This subclass is indented under subclass 115.5. Subject matter wherein the textiles or fibers are proteinaceous, that is the basic chemical structure consists of protein molecules, such as, for example, wool, silk, hair and artificial fibers spun from soya bean, casein, zein or gelatine solutions.

(1) Note. This subclass includes chemical shrinking and delustering by chemical modification.

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.1+, for the treatment of animal fibers still attached to the skin, e.g., fur, and for the treatment of internal tissues except when such tissues have been converted into textile form, in which case the chemically modifying treatments thereof are placed in this or the indented subclass.

127.51 Hair:

This subclass is indented under subclass 127.5. Subject matter wherein the proteinaceous fiber is hair which has been removed from the animal skin.

(1) Note. This subclass includes a method of waving hair detached from the body, by a treatment involving a chemical reaction with the hair, e.g., waving wigs, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

128.1, for a similar process or composition applied to natural wool.

SEE OR SEARCH CLASS:

132, Toilet, subclasses 203+ for a method of waving living human hair, which is more than the mere application of a class 424 composition.

424, Drug, Bio-Affecting and Body Treating Compositions, subclasses 70.2+ for a composition to be applied to living human hair and process of use which is no more than mere application of the composition. See the definitions of Class 424, II, C, Class 8, note (2) for a discussion of what constitutes a disclosure of living hair.

127.6 Treatment with aldehyde or aldehyde derivative, ketone or nitrogen containing organic compound:

This subclass is indented under subclass 127.5. Subject matter wherein the proteinaceous fibers are chemically modified with an aldehyde derivative, ketone or nitrogenous organic compound.

(1) Note. Included within the term aldehyde derivative are compounds which liberate and aldehyde under reaction conditions, e.g., paraformaldehyde, trioxane, hexamethylene tetramine, etc.

128.1 Natural wool or silk:

Subject matter under search class 127.5 wherein wool or silk fibers, felts, or fabrics thereof, are subjected to a chemical modification.

(1) Note. Included within the term wool are alpaca and mohair.

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.14, for the chemical treatment of fur which remains attached to the hide or skin.

112, for improving felting properties.

443, for the weighting of animal fibers and their after treatment, i.e, to protect or

preserve such weighted material from the effects of the weighting metal.

128.3 Chemical modification in the presence of a sulfur or silicone containing material:
Subject matter under search class 128.1 wherein the chemical modification is performed in the presence of a sulfur or silicone containing material.

(1) Note. The sulfur or silicone containing material need not react with the substrate material. It is sufficient for this subclass that the material be merely present during the chemical modification, e.g., catalyst, diluent, etc.

129 Cellulose ester or ether fibers:
This subclass is indented under subclass 115.5. Inventions for the chemical modification of cellulose esters and ethers, such as, for example, to deluster, luster or reluster or protect against delustering, to obtain crinkled or wooly effects, to reduce the tendency to fault, and improve the scroop.

SEE OR SEARCH THIS CLASS, SUBCLASS:
443, for weighting of these materials.

SEE OR SEARCH CLASS:
427, Coating Processes, subclass 170 for process of delustering fabric or yarn by a coating process.

130 Saponifying:
This subclass is indented under subclass 129. Inventions for the treatment of materials above defined by means of agents adapted to saponify the material wholly or partially so as to alter its properties, for instance, with respect to dyeing or melting under hot ironing.

(1) Note. Saponification incidental to some other operation is classified with that treatment and cross referenced here as to any novelty in the saponification step.

SEE OR SEARCH THIS CLASS, SUBCLASS:
114+, for saponification as a step in the production of ornamental effects.
536, for saponification in connection with dyeing.

130.1 SWELLING OR PLASTICIZING OF ARTIFICIAL FIBERS:
Processes wherein artificial fibers or filaments are treated with solvent swelling or plasticizing agent which is stated or known to exert a swelling or plasticizing effect on such materials.

(1) Note. By "plasticizing" or "swelling" is meant a physical modification of the gel structure or body of the filament as distinguished from superficial softening or mere surface lubrication, for facilitating textile operation or improving the handle or feel. Such surface treatments are classified in appropriate subclasses of Class 427. The burden of proof to show that swelling or plasticizing does take place rests with Class 427.

SEE OR SEARCH THIS CLASS, SUBCLASS:
433, for swelling of an artificial fiber in connection with dyeing of the fiber.

131 Cellulose ester or ether fibers:
This subclass is indented under subclass 130.1. Processes wherein the fibers or filaments are esters or ethers of cellulose. The treatment may be for the purpose of effecting or protecting the luster to produce a soft wooly feel, reduce the tendency to laddering, prevent faults, or for softening generally.

SEE OR SEARCH THIS CLASS, SUBCLASS:
130, for swelling in connection with saponifying.
443, for swelling in connection with weighting.

132 With stretching:
This subclass is indented under subclass 131. Processes which include a stretching step.

133 FIBER PROTECTING DURING FLUID TREATMENT:
Inventions directed to the use of inhibitors in a treatment bath of the type employed in the processes classifiable in class 8, to prevent destruction or deterioration of the textile fibers or fabrics due to the acidity or alkalinity of the bath.

SEE OR SEARCH THIS CLASS, SUBCLASS:

101+, for the use of souring agents after bleaching.

115.7, and 125, to complete this search.

137, for the use of souring agents in connection with laundering.

443, for the treatment of textile after weighting to prevent deterioration caused by the agent applied.

480, for addition of agents to a dye bath to prevent coloration of one component of a mixed textile.

SEE OR SEARCH CLASS:

252, Compositions, subclass 193 for souring agents.

428, Stock Material or Miscellaneous Articles, for a cross-reference art collection of products resistant to plant or animal attack.

137 CLEANING OR LAUNDERING:

Processes for cleaning and laundering textile fabrics and fibers, including a fluid or chemical treatment. Includes also combinations and after treatments incidental to such operations not elsewhere classifiable.

(1) Note. Because of the similarity to treatment of textile fibers and fabrics, methods for washing and cleaning of furs, skins and leather are included in subclasses 137+ and in subclasses 147+ when the treatment is merely manipulative in nature.

(2) Note. Included herein are processes wherein fabric conditioners, e.g., softeners, etc., have been added to the laundering fluids.

SEE OR SEARCH CLASS:

100, Presses, subclass 102 for presses combined with other features.

134, Cleaning and Liquid Contact With Solids, for processes of cleaning textiles and fibers not involving chemical or fluid treatment and including the mechanical cleaning of textiles and fibers and cleaning by a gas blast or suction (which is not considered a fluid treatment for Class 8).

510, Cleaning Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, subclasses 276+ for compositions, including laundry detergents, for cleaning textile materials, and subclasses 513 and 515 through 529 for auxiliary compositions, such as rinse-added fabric softeners, used in conjunction with a laundering process.

137.5 Removing formation impurities from artifical fiber:

This subclass is indented under subclass 137. Processes directed to the cleaning or purification of artificial fibers to remove impurities resulting from or incidental to the extrusion or shaping operation, such as, for example, carbon bisulphide or sulfur from viscose yarn.

(1) Note. The subclass includes, for example, combined processes of forming and purifying extruded fibers where the spinning operation is not significantly claimed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

151+, and 155+, for manipulative processes wherein the purification step is only broadly stated.

138 Degumming or desizing:

This subclass is indented under subclass 137. Inventions for the removal of natural sericin or other naturally occurring gum or wax, or an artificially applied size or gum from textile fibers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

930, for degumming in connection with dyeing.

SEE OR SEARCH CLASS:

19, Textiles: Fiber Preparation, for the mechanical removal of silk from cocoons.

162, Paper Making and Fiber Liberation, particularly subclass 2 for the freeing of silk from their cocoons.

435, Chemistry: Molecular Biology and Microbiology, subclass 263 for degumming or desizing by means of enzymes.

139 Scouring, degreasing or bowking:
This subclass is indented under subclass 137. Inventions directed to the removal of impurities such as, grease, wax, dirt, etc., from wool, hide, skin, leather or cotton, preparatory to bleaching, dyeing or other textile operations by scouring as with solvents, soaps, detergents or boiling in alkaline liquors.

SEE OR SEARCH THIS CLASS, SUBCLASS:
141, for waste reclaiming and conditioning.

139.1 With fat solvent:
This subclass is indented under subclass 139. Processes wherein an organic liquid is employed to dissolve the fatty impurities.

SEE OR SEARCH CLASS:
554, Organic Compounds, subclasses 175+ for processes directed to the recovery and further treatment of naturally occurring fatty material.

140 Carbonizing:
This subclass is indented under subclass 137. Inventions for the separation of a mixed impurity or textile fiber by the destruction of one of the constituents thereof, such as, by heat, acids, or solvents.

SEE OR SEARCH THIS CLASS, SUBCLASS:
114.6, and the notes thereto, for the production of ornamental effects such as lace or the like by dissolution or destruction of parts of a composite fabric.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclass 2 for carbonizing apparatus.

141 Waste reclaiming and conditioning:
This subclass is indented under subclass 137. Processes for cleaning and conditioning used journal box lubricating waste and which may include reimpregnation with pure lubricating oil as well as cleaning the used waste.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclass 1 for waste reclaiming apparatus.

142 Dry cleaning:
This subclass is indented under subclass 137. Processes for cleaning by the application of organic solvents without the use of substantial quantities of water.

SEE OR SEARCH THIS CLASS, SUBCLASS:
139+, for the use of organic solvents in conjunction with scouring and degreasing, of wool, cotton, hides, skins and leather.

SEE OR SEARCH CLASS:
95, Gas Separation: Processes, appropriate subclasses, for recovery of volatile solvents from air containing same in the gaseous state.

147 FLUID TREATMENT (MANIPULATIVE):
Manipulative processes for the treatment of textile fibers or fabrics, hides, skins, and leather with fluids.

(1) Note. Patents are placed in subclasses 147+ when a manipulative fluid treatment of general applicability to processes provided for in Class 8 is involved, even though limited by claim terminology to dyeing, bleaching, tanning, or the like. Patents which, because of limited applicability, are classified above are cross referenced to subclasses 147+, for manipulative processes disclosed or claimed.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, for apparatus, generally, for carrying out the processes provided for in subclasses 147+.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 67+ for apparatus comprising a spinning nozzle discharging directly into a liquid bath or shower means, subclass 71 for apparatus comprising means advancing continuous length

work through a downstream liquid bath or shower means, and subclass 72.1 for the combination of a spinning nozzle and downstream gaseous treating means.

148 Confined areas:
This subclass is indented under subclass 147. Processes wherein a portion of the fiber, thread or fabric is protected from contact with the treating liquid by being confined between clamping or compressing members.

SEE OR SEARCH THIS CLASS, SUBCLASS:
149, for the production of spot or intermittent effects by limiting the extent of the immersion or application of the treating liquid.
446+, for reserve areas produced by coating or impregnating a mass to be dyed with substances preventing coloration.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclass 211, for clamps for restricting part of the material from dyeing or other treatment.

149 Intermittent length:
This subclass is indented under subclass 147. Methods for liquid treatment of textiles, particularly in the form of skeins, cops, bobbins or other wound packages, or threads or yarns in transit, in a manner so that only a part of the material is treated. This may be accomplished by injection of the treating liquid into selected areas of the package, by dipping selective parts thereof in the bath, or by intermittently applying the liquid to selected length of the yarn for treatment.

SEE OR SEARCH THIS CLASS, SUBCLASS:
148, for the treatment of selected areas utilizing confining or clamping means.
446+, for reserve or resist dyeing.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclasses 201 and 203, for apparatus for introducing or injecting liquid.

149.1 Combined liquid and gas or vapor:
This subclass is indented under subclass 147. Processes wherein both a gas (or vapor) and a liquid are employed as treating agents.

(1) Note. This subclass does not include those processes wherein the gas or vapor employed is merely a source of agitation or processes which employ heated gases solely for drying purposes.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclasses 5 through 8, 183 and 207 for apparatus for carrying out these processes.

149.2 Gas or vapor:
This subclass is indented under subclass 147. Processes wherein a gaseous or vaporous treating agent is employed.

SEE OR SEARCH CLASS:
26, Textiles: Cloth Finishing, subclass 18.5 for shrinking of textile fabrics by working to compact the same.
34, Drying and Gas or Vapor Contact With Solids, for drying with gases.
223, Apparel Apparatus, subclass 51 for treatment of apparel.

149.3 Including steam:
This subclass is indented under subclass 149.2. Processes in which one of the gases or vapors is steam.

SEE OR SEARCH CLASS:
34, Drying and Gas or Vapor Contact With Solids, particularly subclass 517, for the treatment of textiles with steam for drying or humidifying.

150 Special forms and forming:
This subclass is indented under subclass 147. Processes for treating textile fibers or fabrics in which the particular form in which the textile material is presented or prepared for presentation to the treating fluid is significant in the process. Subcombinations for forming textile materials into special forms for presentation, and not elsewhere provided for, are also included.

150.5 Hides, skins or leather:
This subclass is indented under subclass 150. Processes for treating hides, skins, or leather which are distinguished solely by the manner in which the hide or skin is handled or brought into contact with the treating fluid.

(1) Note. Processes of treating the hide or skin with a specific material or reagent are classified upon the basis of the particular treatment and cross referenced to this subclass, if desired, for any manipulative steps disclosed or claimed. See particularly this class, subclasses 94.1+.

SEE OR SEARCH THIS CLASS, SUBCLASS:
94.1+, see Note (1).

SEE OR SEARCH CLASS:
69, Leather Manufactures, subclasses 29+ for apparatus for treating hides or skins with a fluid.

151 Running lenghts:
This subclass is indented under subclass 150. Processes in which the textile material is in the form of a more or less continuous longitudinally moving mass such as warps, open width fabrics, or ropes.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, particularly subclasses 176 through 180 and 202+ for apparatus used in carrying out these processes.

151.1 Helical textile course:
This subclass is indented under subclass 151. Processes in which the textile material is passed through a substantially helical (or spiral) path during fluid treatment.

151.2 Yarns:
This subclass is indented under subclass 151. Processes in which the material treated is in the form of yarns.

152 Piling:
This subclass is indented under subclass 151. Processes in which the material therein specified is fed, for instance, by pleating, plaiting or folding, into a treating receptacle.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, particularly subclasses 177 and 178 for apparatus for carrying out these processes.

154 Wound packages:
This subclass is indented under subclass 150. Processes applied to yarns and fabrics which have been wound on a cylinder or other holder or which are in the form of skeins, spinning cakes or cheeses.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclasses 7, 8, 150, 189, 198, and 201 for apparatus for carrying out these processes.

155 Yarns:
This subclass is indented under subclass 154. Processes wherein the material treated is in the form of yarns or filaments as distinguished from formed fabrics.

155.1 Radial liquid flow:
This subclass is indented under subclass 155. Processes in which the treating fluid is forcibly injected into or drawn through the material as by means of internally located apertures in the support on which the yarn package is mounted or placed.

155.2 Skeins, cakes or cheeses:
This subclass is indented under subclass 155. Processes in which the yarn is in the form of a skein or in the form of a cake or cheese.

SEE OR SEARCH THIS CLASS, SUBCLASS:
155.1, for processes wherein the material is subjected to radial flow.

156 Pulp or fibers (in bulk):
This subclass is indented under subclass 150. Processes for the treatment of pulp or fibers in bulk form.

SEE OR SEARCH THIS CLASS, SUBCLASS:
141, for waste reclaiming and conditioning.

SEE OR SEARCH CLASS:
162, Paper Making and Fiber Liberation, appropriate subclasses for processes of chemically liberating fiber involving manipulation of pulp or fibers in bulk form.

157 Kier treatment:
This subclass is indented under subclass 147. Processes for the treatment of textile materials in the form of skeins, ropes, warps or webs packed into a gas-tight vessel, but permitting percolation of liquid throughout the stationary packed material, under pressure, generally at high temperature, or by steam injection.

158 Manipulation of liquid:
This subclass is indented under subclass 147. Processes in which the manipulation of the fluid is involved, i.e., its preparation, particular mode of circulation, purification or special mode of application.

SEE OR SEARCH THIS CLASS, SUBCLASS:
142, for circulation and preparation for reuse of a dry cleaning solvent.

159 Agitating immersed material and liquid:
This subclass is indented under subclass 158. Processes for the treatment of textile fibers or fabrics wherein both the material treated as a bulk mass and the treating fluid are stirred by a single or plural means.

(1) Note. Processes involving the use of the usual washing machines are found herein.

SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, for apparatus for this purpose.

160 Adhesive type:
This subclass is indented under subclass 94.16. Processes for removal of hair, fur or feathers from a hide or skin by applying an adhesive which adheres to the hair, etc., and then removing the adhesive along with the hair, fur or feathers, and adhesive compositions for use in such processes.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, for an adhesive composition generally having no depilatory function.
520, Synthetic Resins or Natural Rubbers, subclass 1 and indented classes thereunder for an adhesive composition containing a synthetic resin provided for therein.

161 Living animal:
This subclass is indented under subclass 94.16. Processes and compositions not provided for above for removing hair, etc., from a living animal body.

(1) Note. To be placed in this subclass, a patent must either disclose or claim that the hair is being removed from the living body (e.g., living hair), or have other disclosure which indicates an intent to use the composition or process to remove hair from a living body (e.g., does not injure or irritate the skin from which the hair is removed).

181 Treatment with nitrogen-containing organic compound:
This subclass is indented under subclass 116. Processes wherein the cellulose textiles or fibers are chemically modified by a nitrogen-containing organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
127, and 133, for treatments involving the use of nitrogenous organic compounds as assistants.

182 With aminoplast condensate or aminoplast condensate-former:
This subclass is indented under subclass 181. Processes wherein the cellulose textiles or fibers are chemically modified with a condensation product of an organic nitrogenous compound and an aldehyde or ketone or wherein, in addition to the chemical modification of the cellulose textiles or fibers by the nitrogen-containing organic compound, there is a previous, simultaneous or sucessive treatment with an aldehyde or ketone which can form a nitrogenous- aldehydo- or keto-condensate in situ with the nitrogen-containing organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

116.4, for processes of chemically modifying cellulose textiles or fibers with an aldehyde or ketone, per se.

183 Triazine-aldehyde condensate:
This subclass is indented under subclass 182. Processes wherein the aminoplast condensate is a reaction product of a heterocyclic compound consisting of three carbon atoms and three nitrogen atoms with an aldehyde.

184 Amido-aldehyde condensate:
This subclass is indented under subclass 182. Processes wherein the aminoplast condensate is a reaction product of an amide and an aldehyde.

185 Urea-aldehyde condensate:
This subclass is indented under subclass 184. Processes wherein the amide is urea, H2 N. CO. NH2, or thiourea, H2 N. CS. NH2.

186 Alkylatedurea-aldehyde condensate:
This subclass is indented under subclass 185. Processes wherein the urea or thiourea is substituted by an alkyl or alkylene radical.

187 Carbamic-aldehyde condensate:
This subclass is indented under subclass 184. Processes wherein the amide contains the divalent - NH.COO - radical.

188 Quaternary ammonium compound:
This subclass is indented under subclass 181. Processes wherein the nitrogen-containing organic compound contains a pentavalent nitrogen atom bonded by 4 covalent bonds to carbon atoms.

189 Heterocyclic nitrogen compound:
This subclass is indented under subclass 181. Processes wherein the nitrogen-containing organic compound is heterocyclic, i.e., said compound consists of one or more carbon atoms covalently bonded in a closed ring with at least one atom of nitrogen.

(1) Note. The heterocyclic ring may include oxygen, sulfur, selenium or tellurium as other hetero atoms.

(2) Note. Nonnitrogenous heterocyclic compounds are not included herein but are classified elsewhere according to the organic nitrogen-containing moiety.

190 Triazine:
This subclass is indented under subclass 189. Processes wherein the heterocyclic ring consists of three carbon atoms and three nitrogen atoms.

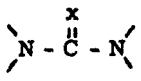
191 Three-membered ring with two C and one N:
This subclass is indented under subclass 189. Processes wherein the heterocyclic ring consists of 2 carbon atoms and one nitrogen atom.

192 Cyano-, isocyano-, thiocyano-, or isothiocyano-group containing:
This subclass is indented under subclass 181. Procecces wherein the nitrogen-containing organic compound contains + -a - C=N, -NC (also written as -N=C), -NCS or -CNS grouping.

193 Ethylenic radial containing:
This subclass is indented under subclass 192. Processes wherein the cyano-, isocyano-, etc compound also contains a - CH: CH2 grouping.

194 Amide:
This subclass is indented under subclass 181. Processes wherein the nitrogen-containing organic compound is a compound which is identical in constitution with one formed by replacing the hydroxyl group of an inorganic oxyacid by an amino radical or the hydroxyl of a carboxyl or organic sulfoxy acid group by NH2 or the H- substituted forms thereof.

195 Urea or thiourea:
This subclass is indented under subclass 194. Processes wherein the amide contains the grouping, shown below, where X=O or S.



196 Amine:
This subclass is indented under subclass 181. Processes where in the nitrogen-containing organic compound is identical in constitution with the derivatives of ammonia (NH3) wherein the N thereof is bonded to at least one carbon of an organic radical.

400 MEASURING, TESTING, OR INSPECTING DYE PROCESS:
This subclass is indented under the class definition. Dyeing processes including the step of sampling, visually, audibly or chemically testing or inspecting, or otherwise physically or mechanically determining some variable condition of the process, dye composition, substrate, or product.

(1) Note. Included herein are processes for determining imperfections or for determining completeness of a reaction or manipulation as well as determinations of undesired variations which will activate correction mechanisms. Recitations of optimum or desired temperatures or pressures or proportions of ingredients are considered nominal only and are classified with the disclosed process on some other basics.

SEE OR SEARCH CLASS:
73, Measuring and Testing, appropriate subclasses for testing, per se.
436, Chemistry: Analytical and Immunological Testing, subclasses 1 through 183 for processes of chemical testing.

401 USING ENZYMES, DYE PROCESS, COMPOSITION, OR PRODUCT OF DYEING:
This subclass is indented under the class definition. Subject matter using enzymes in dyeing.

(1) Note. Included herein is use of oxidases to facilitate oxidation dyeing with an aniline-type dye.

SEE OR SEARCH CLASS:
435, Chemistry: Molecular Biology and Microbiology, for an enzyme composition.

402 WOOD DYEING PROCESS:
This subclass is indented under the class definition. Process for dyeing wood.

SEE OR SEARCH CLASS:
47, Plant Husbandry, subclass 57.5 for coloring growing timber by injecting of coloring agent into living plants.
106, Compositions: Coating or Plastic, subclass 34 for staining compositions which include as a coloring agent a material not of the dye type.

403 FUGITIVE DYE COMPOSITION, PROCESS OR PRODUCT:
Method or composition for dyeing with an easily removable dye or product thereof.

(1) Note. The coloring is usually for the purpose of identifying a fiber during manufacture, weaving, etc., and is removed before final finish operation.

(2) Note. The composition employed may also include an ingredient for simultaneously lubricating or sizing the fiber.

404 DYEING INVOLVING ANIMAL-DERIVED NATURAL FIBER MATERIAL (OTHER THAN SOLELY WOOL OR SILK), E.G., LEATHER, FUR, HAIR, FEATHERS, ETC., COMPOSITION, PROCESS, OR PRODUCT:
This subclass is indented under the class definition. Processes or compositions for dyeing of natural fibers derived from animals, except wool or silk or the product of such a dyeing process.

(1) Note. This subclass includes dyeing of hair, fur, or leather, and includes dyeing on a living animal.

(2) Note. Dyeing protein fibers obtained by dissolving animal tissue and then spinning or molding into a fiber are not classified herein and are classified into this class according to the manipulative method, dye assistant, or dye used thereon.

(3) Note. Wool is the short curly hair from an animal skin commonly woven into a

fabric and is not classified here but is classified by the manipulative method, dye, or assistant used.

SEE OR SEARCH CLASS:

69, Leather Manufactures, subclass 28 for apparatus for dyeing fur.

132, Toilet, subclass 208 for processes containing hair-setting steps classifiable, per se, in Class 132 combined with dyeing.

252, Compositions, subclasses 186.1+ for oxidative bleachants of general utility.

424, Drug, Bio-Affecting and Body Treating Compositions, subclass 62 for bleach composition intended to be used on living hair and processes of bleaching which are no more than the mere application of the composition; and subclass 70.1 for processes of dyeing hair and protecting live skin from the effects of the dyeing process or dye composition.

405 Hair dyeing:

This subclass is indented under subclass 404. Subject matter for dyeing hair.

SEE OR SEARCH CLASS:

424, Drug, Bio-Affecting and Body Treating Compositions, appropriate subclasses for dyeing of living hair nontopically.

406 Oxidation dye:

This subclass is indented under subclass 405. Subject matter utilizing dyes formed by oxidizing organic compounds.

(1) Note. See the Glossary for a definition of oxidation dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:

649, for similar processes and compositions applied to textile material, etc.

407 With dye other than oxidation dye:

This subclass is indented under subclass 406. Subject matter for dyeing with an oxidation dye and another dye which is not an oxidation dye.

408 Plural dyes or dye and coupling agent:

This subclass is indented under subclass 406. Subject matter wherein more than one oxidation dye is used; or wherein an oxidation dye is used together with a coupling agent.

(1) Note. The coupling agents are generally phenols.

(2) Note. The reaction product of an aniline oxidation dye and a coupler may be an indoaniline, an indamine, or an idophenol. See subclasses 416 and 421 respectively, for these products.

409 Heterocyclic amine dye:

This subclass is indented under subclass 408. Subject matter wherein an aminated heterocyclic dye is used.

410 Paradiaminobenzene dye:

This subclass is indented under subclass 408. Subject matter wherein at least one paradiaminobenzene-type dye is used.

(1) Note. Included herein are paradiaminobenzene substituted compounds.

411 With metadiaminobenzene dye:

This subclass is indented under subclass 410. Subject matter wherein a metadiaminobenzene dye is used together with a paradiaminobenzene dye.

412 With aminophenol dye:

This subclass is indented under subclass 410. Subject matter wherein the mixture includes an aminophenol and a paradiaminobenzene.

414 Nitroaniline dye:

This subclass is indented under subclass 406. Subject matter wherein a nitroaniline dye is used.

415 Nitrophenylenediamine dye:

This subclass is indented under subclass 414. Subject matter wherein a nitrophenylenediamine dye is used.

416 Aryldiamine dye:

This subclass is indented under subclass 406. Subject matter wherein an aryldiamine dye is used.

(1) Note. Included herein are, e.g., N-phenyl diaminobenzene (indoaniline), indamine, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
410, for in situ synthesis of indoanilines and for in situ synthesis of indamine by the oxidation of a mixture of p-phenylene diamine and aniline.

421 Aminophenol dye:
This subclass is indented under subclass 406. Subject matter wherein an aminophenol dye is used, e.g., indophenol, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
410, for the in situ synthesis of indophenol.

423 Aminoheterocyclic dye:
This subclass is indented under subclass 406. Subject matter wherein an aminoheterocyclic dye is used.

424 Phenols (natural oxidation dye):
This subclass is indented under subclass 406. Subject matter wherein a phenolic dye is used.

(1) Note. Natural oxidation dyes such as hematin (phenodin), pyrogallol (1, 2, 3 - trihydroxybenzene), etc., are included.

425 Mordant, solvent dye formation or metallized azo dye:
This subclass is indented under subclass 405. Subject matter using a metallic or polymeric mordant; solvent dye formation or a metallized dye on hair.

(1) Note. See the glossary for the definition of mordant and solvent dye.

426 Basic dye, including diphenylmethane, triphenylmethane, xanthene, flourene, methine, acridine, oxazine, phenazine, flavylium, naphthoperinone, quinophthalone, quaternary ammonium group, etc., containing:
This subclass is indented under subclass 405. Subject matter wherein a basic or cationic dye is used.

(1) Note. See the Glossary for a definition of basic dye.

428 Dye reactive with hair:
This subclass is indented under subclass 403. Subject matter wherein a dye reactive with hair is used.

(1) Note. See the Glossary for the definition of reactive dye.

429 Developed on the hair:
This subclass is indented under subclass 405. Subject matter wherein a dye is developed on the hair.

(1) Note. This subclass includes an azo coupling reaction on the fiber and vat dye development, e.g., phthalocyanine dye development, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406, for developing a dye on the hair using an oxidation or nitroaniline-type dye.

431 With fluid treatment, e.g., bleaching with dyeing, etc.:
This subclass is indented under subclass 405. Subject matter wherein dyeing is combined with a fluid treatment of hair, e.g., bleaching and dyeing, etc.

(1) Note. To be proper herein the fluid must be more than a mere solvent assist. See in particular subclass 435 for dyeing utilizing a solvent which merely aids the dye in dyeing.

(2) Note. Mere knowledge or inherency of swelling or -S-S- bond disruption without an express recitation, except for ureas and thioglycolates, is not sufficient to put in subclass 432 or 433 and is in this subclass.

SEE OR SEARCH CLASS:
424, Drug, Bio-Affecting and Body Treating Compositions, appropriate subclass for a fluid treatment that affects live skin of an animal or human; and subclasses 62+ for the combination of bleaching and dyeing of hair on living animals.

432 -S-S- bond disruption, e.g., use of thioglycolates, etc.:
This subclass is indented under subclass 431. Subject matter involving disulfide bond disruption of hair.

(1) Note. Express recitation of a -S-S- bond disruption in a hair dye bath will place the case in this subclass. Use of thioglycolates as dye assistants on fur or hair will be sufficient to place a document into this subclass.

433 Swelling of hair:
This subclass is indented under subclass 431. Subject matter involving swelling of the hair.

(1) Note. -S-S- bond disruptors swell hair but go in subclass 432 above.

(2) Note. Normally alkali or LiBr will swell hair. The latter is known as a lyotropic agent.

(3) Note. A urea or thiourea-type material is often used.

435 Solvent assisted dyeing:
This subclass is indented under subclass 405. Subject matter wherein an organic solvent is used to assist the dyeing of hair.

436 Leather dyeing:
This subclass is indented under subclass 404. Subject matter for dyeing leather.

(1) Note. Included herein are hides of animals as well as skins of reptiles.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, particularly subclasses 3+ for a leather coating and polishing composition.

437 Azo dye:
This subclass is indented under subclass 436. Subject matter using azo dyes (including metal azo) either directly or by developing on the material.

438 DYEING PROCESS OF EXTRACTING OR PURIFYING OF NATURAL DYE:
This subclass is indented under the class definition. Processes directed to the extraction of coloring matter from natural materials or subsequent treatment to purify the same so as to put it in a form suitable for use as a dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
645, for inorganic dye composition.
646, for natural dyes and processes of dyeing therewith.

SEE OR SEARCH CLASS:
23, Chemistry: Physical Processes, subclasses 293+ for physical processes included therein for the treatment of inorganic compounds and nonmetallic elements.
260, Chemistry of Carbon Compounds, for the extraction and purification of carbon compounds classifiable therein.
423, Chemistry of Inorganic Compounds, appropriate subclasses for processes and purification of inorganic compounds and nonmetallic elements by chemical reaction and for processes of extracting, leaching, or dissolving inorganic compounds and nonmetallic elements.

439 Logwood:
This subclass is indented under subclass 438. Subject matter containing logwood type dyes.

(1) Note. Included herein is the aqueous extraction of heartwood, i.e., of hematoxyon campechium and oxidation in air to yield hematein.

440 DYE RECOVERY PROCESS, OTHER THAN NOMINAL RECOVERY:
This subclass is indented under the class definition. Processes involving a significant dye recovery process.

(1) Note. Included herein are processes wherein a dye is recovered from a dyed material, e.g., by extraction, absorption, etc., to be reused. Also included herein is the recovery of the dye from a dye bath.

SEE OR SEARCH THIS CLASS, SUBCLASS:
502, for mere recycling or replenishment of the dye in a dye bath.

441 PROCESS OF COLOR RENOVATING A DYED PRODUCT:
This subclass is indented under the class definition. Processes involving treating of worn or faded dyed materials so as to revive the original color or to redye the same in another color.

(1) Note. Included herein is the dyeing of rugs, tapestries, and furniture covering while in place.

SEE OR SEARCH THIS CLASS, SUBCLASS:
525, for dye soaps.

442 COLOR PROTECTING PROCESS FOR DYED PRODUCT:
This subclass is indented under the class definition. Subject matter relating to the employment of agents for the protection of dyed materials against stripping or removal of the color e.g., bleaching, scouring, or bowking of the dyed textile, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
490, for the combination of dyeing and preserving the substrate of fiber.

443 WEIGHTING PROCESS (LOADING SILK WITH METAL SALTS):
This subclass is indented under the class definition. Processes for weighting a textile.

(1) Note. Weighting agents are normally antimony or heavy metal salts to add weight to silk.

(2) Note. The amount of metallic compound for weighting silk differs from the amount used for mordanting. Combined weighting and mordanting is herein.

(3) Note. Herein the weighting materials may be treated to overcome or inhibit the destructive effect of acids or other substances that might develop on decomposition of the incorporated weighting materials.

SEE OR SEARCH THIS CLASS, SUBCLASS:
618+, for compositions for weighting.

444 PROCESS UTILIZING ELECTRIC, MAGNETIC, OR WAVE ENERGY:
This subclass is indented under the class definition. Processes involving the use of electric, magnetic, or wave energy.

(1) Note. Included herein but not limited to the examples enumerated is the use of electric, magnetic, or wave energy in preparing a dye or mordant composition, or in using dye or treating a dyed product.

(2) Note. The wave energy applied to the material may be light, emanations of radioactive material, infrared rays, ion bombardment, etc.

SEE OR SEARCH CLASS:
250, Radiant Energy, subclasses 428+ for fluent material containment, support of transfer means with or without a radiation source; subclass 493.1 for radiant energy generation and sources; and subclasses 492.1+ for the irradiation of objects and material.
378, X-Ray or Gamma Ray Systems or Devices, subclasses 64+ for X-ray irradiation.
427, Coating Processes, subclasses 457+ for coating processes employing radiant or wave energy.

445 PROCESS OF PRINTING PERMANENTLY ON SUBSTRATE, OTHER THAN NOMINAL PRINTING, USING PRINT PASTE CONTAINING DISCHARGE MATERIAL, RESIST MATE-

RIAL, OR DYE MATERIAL; OR STENCIL DYEING:
This subclass is indented under the class definition. Processes involving the application of dyes on localized areas of a substrate by impression with a thickened dye paste or through openings or previous portions of a pattern sheet (stencil).

(1) Note. This and indented subclasses also include methods for the production of patterns by the application of substances to prevent coloration in local areas of the material or for discharging the color in a previously dyed ground, as well as chemical modification of local areas of the substrate so as to enhance or prevent dyeing in such areas.

(2) Note. The recitation of screen printing, resist, reserve, or discharge or detailed manipulative steps directly related to the printing are considered to be more than mere printing and as such are proper for this area.

(3) Note. Excluded from this subclass as being considered nominal are methods reciting conventional printing steps, e.g., steaming, washing or soaping, drying, fixing, etc.

(4) Note. For purposes of this subclass resist and reserve have been used interchangeably.

(5) Note. The distinction between Class 106, subclass 31.27 and this area is that the coloration in this class is produced by imbibition and absorption by or combination with material. Class 106 usually involves an insoluble pigment suspended in an oleaginous vehicle, while this class usually involves a soluble dye in an aqueous paste. Generally, the prints of this class must be developed by steaming or chemical treatment, while in Class 106, simple drying is the more usual manner. Processes employing the compositions, of Class 106 are found in Class 427, Coating Processes.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, subclasses 31.27+ for a printing ink.

446 Resist or reserve:
This subclass is indented under subclass 445. Processes for the production of patterns in a substrate by preventing coloration in local areas.

(1) Note. The resist composition may also include coloring matter for illuminating the parts of the pattern by coloring the same differently from the ground color.

(2) Note. The prevention of coloration may be accomplished by mechanical masks such as resinous or waxy materials; by chemical means preventing the formation or development of the color in local areas; or by modifying the characteristics of selected areas of the material, so that it does not have the same tinctorial properties as the untreated parts of the material, as by mercerizing, immunizing, etc. The treated areas may have their affinity for certain types of dyes decreased but their receptivity for other types enhanced, as in the case of immunized or saponified areas, or by the application of so-called mordant-resists.

(3) Note. Silk screen printing is considered resist printing.

(4) Note. In the subclasses hereunder classification is only on the dye resisted.

SEE OR SEARCH THIS CLASS, SUBCLASS:
481, for effects obtained by treating only certain threads prior to weaving, spinning, or twisting, etc.

447 Wax:
This subclass is indented under subclass 446. Processes containing a wax.

448 Chemically modified local areas:
This subclass is indented under subclass 446. Processes wherein local or selected areas of the substrate are chemically modified so that they are dyed differently from the untreated parts.

(1) Note. Local areas are areas of a substrate which are less than the whole surface of the substrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
115, for similar pattern effects obtained without coloring.
120, and 181+, for immunizing, per se.

449 Reactive dye:
This subclass is indented under subclass 446. Processes using a resist with a reactive dye.

(1) Note. See the Glossary for the definition of a reactive dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
543, for a reactive dye composition.

450 Oxidation dye, e.g., aniline, nitroaniline, etc.:
This subclass is indented under subclass 446. Processes wherein the dye resisted is an oxidation dye, e.g., aniline, nitroaniline, diphenyl black, etc.

(1) Note. See the Glossary for the definition of oxidation dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406, and 649, for oxidation dye composition.

451 Azo dye component ground:
This subclass is indented under subclass 446. Processes wherein an azo ground component of an azo dye is prevented from diazotization, coupling or other development in local areas.

SEE OR SEARCH THIS CLASS, SUBCLASS:
457+, for the discharge of azo dyes already formed on a substrate.
666+, for azo coupling on the fiber.

452 Mordant dye, e.g., dye with a metal chelating group, etc.:
This subclass is indented under subclass 446. Processes wherein a mordant dye is resisted.

(1) Note. See the Glossary for a definition of the term mordant dye.

453 Vat dye or sulfur dye, e.g., quionic or indigoid reducible dye, sulfur-organic reaction product dye, etc.:
This subclass is indented under subclass 446. Processes wherein a vat or sulfur dye is resisted.

(1) Note. See the Glossary for a definition of the terms vat dye and sulfur dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
650, for other vat and sulfur dye compositions.

454 Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, naphthoperinone, quinophthalone, quaternary ammonium group, etc., containing:
This subclass is indented under subclass 446. Processes wherein a basic or cationic dye is resisted.

(1) Note. See the Glossary for a definition of basic dye.

455 Acid (including direct) dye, e.g., sulfonated, sulfamated, etc.:
This subclass is indented under subclass 446. Processes wherein an acid or direct dye is resisted.

(1) Note. See the Glossary for the definition of an acid dye.

456 Disperse dye:
This subclass is indented under subclass 446. Processes wherein a disperse dye is resisted.

(1) Note. See the Glossary for the definition of a disperse dye.

457 Discharge utilized:
This subclass is indented under subclass 445. Processes for the removal of a color from selected local areas of a substrate which has been previously colored in order to obtain pattern effects.

(1) Note. In the subclasses hereunder classification is only on the dye discharged.

SEE OR SEARCH THIS CLASS, SUBCLASS:
102, for stripping color entirely from fabrics.
446, for agents applied to prevent the development of color from a previously applied intermediate or dye component as such agents are not regarded as being discharges for the purposes of this subclass.

458 Chemically modified local areas:
This subclass is indented under subclass 457. Processes wherein local or selected areas of the substrate are chemically modified so that they are dyed differently from the untreated parts.

SEE OR SEARCH THIS CLASS, SUBCLASS:
115, for similar pattern effects obtained without coloring.
120, and 181+, for immunizing, per se.

459 Oxidation dye, e.g., aniline, nitroaniline, etc.:
This subclass is indented under subclass 457. Processes wherein an oxidation dye is discharged.

(1) Note. See the Glossary for the definition of an oxidation dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406+, for oxidation dyes on hair or fur.
649, for oxidation dyes on textiles.

460 Mordant dye:
This subclass is indented under subclass 457. Processes wherein a mordant dye is discharged.

(1) Note. See the Glossary for the definition of a mordant dye.

461 Vat dye or sulfur dye, e.g., quinonic or indigold reducible, or sulfur-organic compound reaction product dye, etc.:
This subclass is indented under subclass 457. Process wherein a vat or sulfur dye is discharged.

(1) Note. See this Glossary for a definition of the term vat dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
650, for other vat and sulfur dye compositions.

462 Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, napthoperinone, quinophthalone, quarternary ammonium group, etc., containing:
This subclass is indented under subclass 457. Processes wherein a basic or cationic dye is discharged.

(1) Note. See the Glossary for a definition of basic dye.

463 Acid (including direct) dye, e.g., sulfonated, sulfamated, etc.:
This subclass is indented under subclass 457. Processes wherein an acid or direct dye is discharded.

(1) Note. See the Glossary for a definition of acid dye.

464 Disperse dye:
This subclass is indented under subclass 457. Processes wherein a disperse dye is discharged.

(1) Note. See the Glossary of a definition of disperse dye.

465 Vat dye or sulfur dye, e.g., quinonic or indigold reducible dye, sulfur-organic compound reaction product dye, etc.:
This subclass is indented under subclass 445. Processes for direct printing with a vat dye or sulfur dye.

466 Azo dye:
This subclass is indented under subclass 445. Processes in which the components of an azo dye are present during printing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
662+, for similar processes not limited to printing.

467 DIFFUSION TRANSFER DYEING PROCESS, TRANSFER SHEET AND PRODUCT:
This subclass is indented under the class definition. Subject matter wherein a support carrying a dye or discharge is brought into contact with the surface to be colored and the dye or discharge released to the surface, usually by moistening with a solvent or by heating or both.

(1) Note. This subclass also includes the combination of a support with a dye or discharge material thereon, i.e., transfer sheet.

SEE OR SEARCH THIS CLASS, SUBCLASS:
445, for textile printing by Impression or by stenciling.
478, for marbleizing textiles.

SEE OR SEARCH CLASS:
101, Printing, subclass 464 for planographic printing involving transfer of marking material by film to film inhibition.
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 230 for processes of transferring lamina from an adhered carrier.
427, Coating Processes, particularly subclasses 146+ for processes for making transfer or copy sheets by a coating process; and subclass 429 for applying a coating with an absorbent applicator.
428, Stock Material or Miscellaneous Articles, appropriate subclasses, especially subclasses 103 and 195+ for a single or plural layer web or sheet stock material product with a differential or discontinuous coating or impregnation; and subclasses 914+ (a cross-reference art collection) for a product in which a coating or impregnation is released to another surface, i.e., transfer sheets.

468 Release layer utilized:
This subclass is indented under subclass 467. Subject matter wherein a layer on the support is used to facilitate the separation of the material to be transferred.

469 Steam:
This subclass is indented under subclass 467. Subject matter wherein steam is involved in the transfer process.

470 Dry heat treatment for penetration:
This subclass is indented under subclass 467. Subject matter wherein dry heat is used to facilitate dye penetration.

471 Sublimation:
This subclass is indented under subclass 470. Subject matter wherein sublimating is involved in the transfer to the receiving surface.

472 Air pressure:
This subclass is indented under subclass 471. Subject matter wherein air pressure is involved in the transfer process.

473 SUBAMBIENT TEMPERATURE DYEING PROCESS, I.E., LESS THAN 20 DEGREES C.:
This subclass is indented under the class definition. Processes where subambient temperature is used in dyeing.

(1) Note. 20 degrees C. (68 degrees F.) is defined as ambient temperature for purposes of this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:
619, for ammonia assisted dyeing.

474 REACTIVE GAS OR REACTIVE VAPOR UTILIZED IN DYE PROCESS:
This subclass is indented under the class definition. Processes wherein a reactive gas or vapor is used.

(1) Note. For purposes of this subclass ozone or nitrogen oxides are reactive gasses used to develop a reduced vat dye on the fiber.

475 CONFINED GAS PHASE SUPERATMOSPHERIC PRESSURE DYEING PROCESS (OTHER THAN STEAM BELOW 138 DEGRESS C.):

This subclass is indented under the class definition. Processes wherein a confined superatmospheric pressure is used in dyeing (gas phase).

(1) Note. Processes for the treatment of dyed or printed textile materials to complete the effect of the dye such as to improve fastness, prevent fading or increase brilliance are in this subclass.

(2) Note. Steam under pressure at temperature below 138 degrees C. is considered routine and not included herein.

476 Steam (at 138 degrees C. or above):

This subclass is indented under subclass 475. Processes using steam at a temperature of 138 degrees C. (280 degrees F.) or above.

477 FOAM DYE COMPOSITION OR PROCESS:

This subclass is indented under the class definition. Subject matter wherein foam is generated as by a gas entering a dye solution and causing bubbling and these bubble gases in dye liquor are applied to the material to be dyed.

(1) Note. Foam dyeing is usually used so as to limit the quantity of dye liquor applied to the material to be dyed.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 10+ for foam colloid systems or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

478 PATTERN EFFECT DYEING, PROCESS, COMPOSITIONS, OR PRODUCTS:

This subclass is indented under the class definition. Processes and compositions for the production of pattern effects on a substrate by methods involving a manipulation of the materials, and product thereof.

(1) Note. Excluded herein are pattern effects due to blends of fibers or materials wherein different materials or fibers have a different affinity with the dye; and see in particular subclasses 529+.

SEE OR SEARCH THIS CLASS, SUBCLASS:

114+, for ornamental and pattern effects produced by the chemical modification of the textile material, where coloring is not involved or is only incidental.

148, and 149, for manipulative processes for producing intermittent variation in depth of color, and intermittent color and noncolor.

SEE OR SEARCH CLASS:

427, Coating Processes, subclasses 256+ for processes of producing a nonuniform coating.

479 Discontinuous or multidirectional movement of substrate:

This subclass is indented under subclass 478. Subject matter wherein a substrate is moved discontinuously or multidirectionally during the dyeing process for an effect.

(1) Note. In this subclass the movement can be produced by vibrating a substrate in or out of contact with the applicator.

480 Cross dyeing:

This subclass is indented under subclass 478. Subject matter wherein a component part of a substrate is differently treated to modify the dye affinity or color produced such as by mordant, resist, or dye intermediate, and then dyed or developed with one or more dyes or dye components to produce pattern effects.

(1) Note. Such effects due to a natural difference in the dyeing affinity of fibers in a blend are excluded from this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:
529+, for pattern effects in a fiber blend due to natural difference in dye affinity of different fibers.

481 Mixture of treated and untreated individual fibers:
This subclass is indented under subclass 480. Processes wherein a mixture of treated and untreated fibers is used.

SEE OR SEARCH THIS CLASS, SUBCLASS:
529+, where effects are due to a natural difference in dyeing affinity of the component threads.

482 Suppress dyeing, e.g., fold, twist, wrinkle, etc.:
This subclass is indented under subclass 478. Subject matter wherein an effect is obtained by suppressing access of the dye to portions of the substrate to be dyed by a temporary shaping of the substrate.

(1) Note. Included herein is manipulating the material by folding, twisting, wrinkling, etc., In order to prevent areas of the material from being exposed to the applied dye or to limit the relative amount of dye applied to some areas.

483 Random pattern effect, e.g., space dyeing, etc.:
This subclass is indented under subclass 478. Subject matter wherein the dye is applied in a manner so as to produce a random nonrepeating pattern.

(1) Note. Space dyeing is a yarn dyeing process in which one strand receives more than one color at irregular intervals. It produces an effect of unorganized design.

484 Differential diffusion:
This subclass is indented under subclass 483. Subject matter using diffusion of the dye through the substrate to produce irregular patterns of dyed areas.

485 Two or more sequential dye application steps:
This subclass is indented under subclass 478. Subject matter involving two or more sequential dye applications to produce a pattern dyeing effect.

SEE OR SEARCH THIS CLASS, SUBCLASS:
502, for replenishing a dye solution in a dye bath.
504, for plural applications of the same dye wherein no pattern dyeing effect is produced.
529+, for one or two bath union dyeing of fiber mixtures (or blends).

486 Direct contact with applicator:
This subclass is indented under subclass 478. Subject matter wherein direct contact between applicator and substrate occurs.

(1) Note. Printing with stencil or roller is in subclass 445. In this subclass 486 the purpose of the contact is to bring the solution to the substrate and to permit it to migrate into the substrate for an effect.

487 Roller or Disc:
This subclass is indented under subclass 486. Subject matter wherein the dye is applied by a roller or disc.

SEE OR SEARCH CLASS:
101, Printing, for roller printing.

488 BONDING OF PREFORM, E.G., FLOCKING, ETC., WITH DYEING, PROCESS OR PRODUCT:
This subclass is indented under the class definition. Subject matter involving the combined operations of bonding two or more performs together and dyeing same.

(1) Note. This subclass includes the process of bonding and dyeing or the product produced after the dyeing operation.

(2) Note. In this process adhesive or plasticizers may be used to bind preforms together.

489 DRAWING OR STRETCHING OF PREFORM WITH DYEING, PROCESS OR PRODUCT:

This subclass is indented under the class definition. Subject matter involving drawing or stretching of a preform and dyeing same.

(1) Note. This subclass includes the process of stretching or drawing, or the product produced after the dyeing operation.

490 PROCESS OF PRESERVING SUBSTRATE COMBINED WITH DYEING OR PRODUCT THEREOF, E.G., BIOCIDAL OR FIRE RETARDANT TREATMENT, ETC.:

This subclass is indented under the class definition. Subject matter involving the combination of dyeing with treating a substrate with a biocidal, fire retardant, or other preservative treatment.

(1) Note. This subclass includes the dyed product.

SEE OR SEARCH THIS CLASS, SUBCLASS:

442, for protecting the color.

491 OVERALL DIMENSIONAL MODIFICATION OR STABILIZATION, E.G., CREPING, ETC., INCLUDING USE OF CHEMICAL ADDITIVE TO FORM AT LEAST A TEMPORARY COMPOSITION, WITH DYEING PROCESS:

This subclass is indented under the class definition. Processes involving an overall dimensional modification or stabilization of the substrate (including use of a chemical additive to form a treating composition) and dyeing.

(1) Note. The treating can be physical, e.g., shrinking, heat setting, creping, etc., or it can be by a chemical additive.

(2) Note. Creping refers to several methods of producing a crepe effect on a fabric. See the Glossary for a definition of crepe.

SEE OR SEARCH THIS CLASS, SUBCLASS:

118, for parchmentizing.
125, for mercerizing or alkaline treatment.
537, for parchmentizing (paper), or mercerizing (cotton), in combination with dyeing.
541, for cross-linking to facilitate dyeing.

492 Solvent treatment of synthetic fibers:

This subclass is indented under subclass 491. Processes involving the combination of treatment of synthetic fiber with a solvent and dyeing, and product thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

130.1+, for the subcombination of plasticizing artificial fibers.

493 Modification of molecular structure of substrate by chemical means, e.g., cross-linking of substrate, hydrolysis of substrate, etc.:

This subclass is indented under subclass 491. Processes involving modification of chemical structure by chemical means, e.g., cross-linking, hydrolysis, etc., of substrate and product thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

541, for cross-linking agents such as diepoxides, to anchor a dye.

494 NOMINAL TEXTILE MANUFACTURE PROCESS COMBINED WITH DYEING:

This subclass is indented under the class definition. Processes involving the combination of a nominal textile manufacturing step together with a dyeing step.

(1) Note. Nominal textile manufacture here refers to a broadly recited textile operation, e.g., mere recitation of weaving, knitting, tufting, sewing, texturizing, etc.

495 COATING OR SIZING WITH DYEING OR PRODUCT:

This subclass is indented under the class definition. Processes involving the combination of coating or sizing together with a dyeing step and product thereof.

(1) Note. Coating with polymer which acts as an assistant or mordant is considered part of the dyeing method and goes below the organic polymer additives.

SEE OR SEARCH THIS CLASS, SUBCLASS:
490, for fire or biocidal resistant coating.

496 Aminoplast or aminoplast precursor coating:
This subclass is indented under subclass 495. Subject matter wherein an aminoplast or aminoplast precursor is applied as a coating or sizing.

(1) Note. Included herein but not limited thereto are unreaformaldehyde and melamineformaldehyde aminoplasts.

SEE OR SEARCH THIS CLASS, SUBCLASS:
554, for guanidine-formaldehyde as an assistant.
556, for use of dicyandiamideformaldehyde or cyanamideformaldehyde as assistant for an acid dye.

497 FORMING, SHAPING, OR RESHAPING WITH DYEING PROCESS OR PRODUCT:
This subclass is indented under the class definition. Processes involving forming, shaping, or reshaping a preform together with a dyeing step and product thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
489, for stretching or drawing to reshape in combination with dyeing.
538, for gelled fibers dyeing since the gel form of a fiber is a form of the fiber before it is hardened and involves stretching.

498 PROCESS OF DYEING INVOLVING DRY POWDER APPLICATION:
This subclass is indented under the class definition. Processes involving applying a dye in dry powdered form to a substrate to dye.

(1) Note. Dried on the fabric print pastes are not considered powdered and are classified with dye or dye assistant.

SEE OR SEARCH THIS CLASS, SUBCLASS:
524, for dye powders as dye concentrates or process of preparing same (to be dissolved in liquid dye baths and diluted thereby).

499 SPRAY-DYEING PROCESS:
This subclass is indented under the class definition. Processes involving using a gas to propel fine particles of a liquid dye composition against the substrate to dye the same, or utilizing a nozzle to spray a dye composition onto a substrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
478+, where a pattern effect is obtained.

500 DYEING PROCESS UTILIZING MECHANICAL PRESSURE, E.G., PRESSES, ETC.:
This subclass is indented under the class definition. Processes wherein mechanical pressure is utilized to assist in dyeing.

(1) Note. Included herein is use of molten metal bath, mechanical presses, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
497, for mechanical shaping with pressure to reshape the substrate.

501 TWO-PHASE SYSTEM DYEING COMPOSITION OR PROCESS:
This subclass is indented under the class definition. Processes and compositions involving dye compositions in a two-phase system or wherein a change of phase occurs.

(1) Note. Included herein are, e.g., systems where the dye precipitates as it loses solubility or dissolves as it gains solubility. i.e., change of phase, dye distributing between two different phases as in an emulsion, preparation of dye compositions wherein dye is being forced into a phase of an emulsion, etc.

502 REPLENISHMENT OR REPLACEMENT OF SAME BATH LIQUOR IN DYEING PROCESS:
This subclass is indented under the class definition. Processes where replenishment or replacement of a dye bath liquor is involved, using the same dye.

503 DYEING PROCESS INVOLVING BURNING OF REAGENTS:
This subclass is indented under the class definition. Processes involving removing used reagents by burning.

504 PROCESS INVOLVING PLURAL APPLICATION STEPS WITH SAME DYE:
This subclass is indented under the class definition. Processes involving plural applications of the same dye to a substrate.

505 DIFFERENTIAL FLUID PRESSURE ASSISTED DYEING PROCESS, E.G., AIR PRESSURE, VACUUM, ETC.:
This subclass is indented under the class definition. Processes wherein differential fluid pressure, e.g., air pressure or vacuum, etc., is utilized in the dyeing process.

(1) Note. Use of air for drying only is not sufficient to place in this subclass.

506 NONTEXTILE, DYEING PROCESS OR PRODUCT, INCLUDING INORGANIC FIBER:
This subclass is indented under the class definition. Processes involving dyeing of nontextile articles and products thereof.

(1) Note. Paper is classified as a textile in this class and thus is not in this subclass.

(2) Note. See the Glossary for a definition of textile materials.

507 Contact lens:
This subclass is indented under subclass 506. Subject matter for dyeing of contact lens.

SEE OR SEARCH CLASS:
427, Coating Processes, subclasses 162+ for coating a lens.

508 Vinyl chloride polymer substrate:
This subclass is indented under subclass 506. Subject matter for dyeing vinyl chloride polymer or copolymer substrate.

509 Acrylate polymer substrate:
This subclass is indented under subclass 506. Subject matter wherein an acrylate polymer or copolymer substrate is dyed.

510 Acrylonitrile polymer substrate:
This subclass is indented under subclass 506. Subject matter involving dyeing an acrylonitrile polymer or copolymer substrate.

511 Contains basic addition comonomer, e.g., vinyl pyridine, etc.:
This subclass is indented under subclass 510. Subject matter wherein the copolymer substrate includes a basic addition comonomer, e.g., vinyl pryidine, etc.

512 Polymer from polyol and a polycarboxylic acid or derivative substrate:
This subclass is indented under subclass 506. Subject matter for dyeing material which is the reaction product of a polyol and a polycarboxylic acid or a polycarboxylic acid derivative.

513 Olefin polymer substrate or rubber:
This subclass is indented under subclass 506. Subject matter for dyeing a polymer derived from an unsaturated hydrocarbon or natural rubber substrate.

514 Styrene polymer:
This subclass is indented under subclass 513. Subject matter for dyeing a styrene polymer substrate.

515 Polymer from isocyanate and a polyol, e.g., polyurethane, etc., substrate:
This subclass is indented under subclass 506. Subject matter for dyeing substrate derived from a polyol and an isocyanate, e.g., polyurethane, etc.

(1) Note. Blocked isocyanates are included herein as being isocyanate reactants.

SEE OR SEARCH CLASS:
521, Synthetic Resins or Natural Rubbers, subclass 53 for treating a foamed solid polymer.

516 Amide polymer substrate:
This subclass is indented under subclass 506. Subject matter for dyeing a polyamide substrate.

517 Natural polyamide, e.g., casein, gelatin, keratin, collagen, etc.:
This subclass is indented under subclass 516. Subject matter for dyeing natural polyamides.

(1) Note. Included herein are naturally occurring proteins, e.g., keratin, casein, zein, gelatin, collagen, etc.

518 Cellulose substrate other than paper:
This subclass is indented under subclass 506. Subject matter wherein cellulose material, other than paper, is dyed.

(1) Note. Paper is considered as a textile material in this art.

519 Cellulose ester or cellulose ether:
This subclass is indented under subclass 518. Subject matter for dyeing a cellulose ether or ester substrate.

520 Phenol-aldehyde resin substrate:
This subclass is indented under subclass 506. Subject matter for dyeing a phenol-aldehyde resin substrate.

521 Oil, fat, wax, or gasoline dyeing:
This subclass is indented under subclass 506. Subject matter for coloring oils, fats, wax, or gasoline.

SEE OR SEARCH CLASS:
44, Fuel and Related Compositions, subclass 642 for a composition which in the presence of burning solid fuel changes the color of the flame produced.
106, Compositions: Coating or Plastic, particularly subclasses 253+, 266, and 272 for plastic and coating compositions comprising a colored oil or wax.
208, Mineral Oils: Processes and Products, subclass 12 for (a) processes of treating mineral oils in order to impart a color thereto (including imparting fluorescence thereto) which does not involve the addition of a pigment or dye thereto, and (b) products of such processes.

522 Inorganic substrate:
This subclass is indented under subclass 506. Subject matter for dyeing an inorganic substrate.

523 Silica or calcareous substrate, e.g., glass, etc:
This subclass is indented under subclass 522. Subject matter for coloring a calcareous or siliceous substrate.

(1) Note. Included herein are, e.g., bone, pearl, chips, stone, sand, plaster of Paris, gypsum, plasterboard, glass, etc.

SEE OR SEARCH CLASS:
65, Glass Manufacturing, subclasses 430+ and 443+ for a process of coating of glass filaments or fibers with a colored material combined with the step of forming the filaments or fibers.
106, Compositions: Coating or Plastic, particularly subclass 712 for the incorporation of coloring matter in the formation of artificial stone.

524 DRY DYE COMPOSITION OTHER THAN MERE MIXTURE OF TWO OR MORE DYES ALONE OR PROCESS OF MAKING:
This subclass is indented under the class definition. Subject matter involving a dry dye composition or its method of production.

(1) Note. Included herein is a micro capsule which may have a fluid center.

(2) Note. Production of dyes from dye cakes is normally by grinding and produces a powder which is included herein. Dye powder, per se, is in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:
498, for process of dyeing with a powder dye.
638+, for a mere mixture of dyes.

525 Dye soap or detergent:
This subclass is indented under subclass 524. Subject matter containing dye admixed with soap or detergent for coloring textile materials with or without a simultaneous detergent action.

SEE OR SEARCH THIS CLASS, SUBCLASS:
441, for combined processes involving coloring or recoloring and cleaning or renovating.
648, for bluing soaps.

526 Dye in specified form other than mere powder:
This subclass is indented under subclass 524. Subject matter wherein a dye composition is in a specific physical form other than mere powder, per se.

(1) Note. For example, this subclass includes such forms as tablets, microspheres, packages, balls, laminaes, flakes, waters, sheets, particles of a specific size, etc.

(2) Note. Dye powder, per se, is not significant form for this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:
525, for dye soaps.
648, for bluing agents.

SEE OR SEARCH CLASS:
206, Special Receptacle or Package, subclass .5 for infusion packages.

527 DYE CONCENTRATE COMPOSITION WHEREIN AN ADDITIONAL AMOUNT OF A CONSTITUENT OF THE COMPOSITION MUST BE ADDED BEFORE USE:
This subclass is indented under the class definition. Subject matter relating to dye concentrate compositions or methods of making these compositions wherein an additional amount of a constituent of the composition must be added before using.

(1) Note. The composition as claimed requires the addition of further constituents in order to be usable in dyeing process or wherein the composition is referred to as a concentrate.

528 Highly viscous dye concentrate e.g., paste, etc:
This subclass is indented under subclass 527. Subject matter where dye concentrate is in a highly viscous or thickened state, e.g., a paste, etc.

(1) Note. The paste form can arise from the dye preparation, as in wet grinding of dye cakes.

(2) Note. Normal print pastes are not concentrates. Print pastes with conventional thickeners are classified by the dye, method of application or other dye assistant.

529 MULTIPLE CHEMICALLY DIVERSE FIBERS OR FIBERS WITH DIFFERENT CROSS SECTION, PROCESS OF DYEING OR PRODUCT:
This subclass is indented under the class definition. Subject matter relating to processes for coloring textile materials composed of more than one kind of fiber in solid or contrast shades and the preparation of the colored effect threads for a mixed fabric or product thereof.

(1) Note. Dyeing of mixed fiber fabric followed by complete discharge of the dye from one of the components of the mixed material is in this subclass.

(2) Note. Fiber blends herein means a mixture of diverse fibers and does not mean a blend of polymers in a single fiber.

SEE OR SEARCH THIS CLASS, SUBCLASS:
480, for dyeing of mixed fibers, one part of which has been treated in local areas to modify its dye affinity and produce pattern effects.

530 Resisting a fiber:
This subclass is indented under subclass 529. Subject matter wherein an agent for restricting the coloration to one kind of fiber or at least decreasing the affinity of the color for one of the mixed fibers is used.

(1) Note. This agent for purposes of this subclass may be applied before dyeing to some or all of the component fibers.

SEE OR SEARCH THIS CLASS, SUBCLASS:
446, for similar processes (not limited to mixed fiber fabrics) involving printing.

531 Synthetic polyamide:
This subclass is indented under subclass 529. Subject matter involving dyeing a blend containing a polyamide other than wool or silk.

532 Polyester fiber and cellulose fiber:
This subclass is indented under subclass 529. Subject matter involving dyeing a blend of polyester fiber and cellulose fiber.

(1) Note. Polyester fiber is made by the reaction of a polyol and a poly-carboxylic acid or derivative.

533 Polyester fiber with wool or silk fiber:
This subclass is indented under subclass 529. Subject matter involving dyeing a blend of polyester with wool or silk.

534 Polyacrylonitrile fiber:
This subclass is indented under subclass 529. Subject matter for dyeing a blend containing a fiber derived from acrylonitrile.

(1) Note. This subclass includes acid and basic modified polyacrylonitrile blends. The acid modified polyacrylonitrile usually is a polyacrylonitrile with additional pendant -SO3- or -COO- radicals as by copolymerizing acrylonitrile with a sulfonated monomer.

535 PHENOL-ALDEHYDE FIBER DYEING COMPOSITION, PROCESS, OR DYED PRODUCT:
This subclass is indented under the class definition. Subject matter relating to processes or compositions, for dyeing or phenolaldehyde resin fiber or product.

536 FIBER DERIVED FROM SAPONIFIED CELLULOSE ESTERS OR FROM NITROCELLULOSE CONVERTED TO CELLULOSE, DYE COMPOSITION, PROCESS, OR PRODUCT:
This subclass is indented under the class definition. Subject matter relating to processes or compositions for dyeing of fibers derived from saponified cellulose ester or from nitrocellulose converted to cellulose, or product thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
115, for processes of ornamenting a textile or fiber including a saponifying step.
130, for process of saponifying per se of a cellulose ester or ether fiber or textile.
446, for dyeing processes which include the application of a saponifying agent by printing to local areas of a fabric or to intermittent parts of a yarn.

537 MERCERIZED CELLULOSE FIBER OR PARCHMENTIZED CELLULOSE FIBER DYEING COMPOSITION, PROCESS, OR PRODUCT:
This subclass is indented under the class definition. Subject matter relating to compositions or processes for dyeing mercerized, acidified, or parchmentized cellulose.

(1) Note. Mercerizing is the treatment of cellulose fiber with cold concentrated alkali.

(2) Note. Parchmentizing is the treatment of paper with cold concentrated acid to make it parchment-like.

538 GELLED FIBER-DYEING PROCESS OR PRODUCT:
This subclass is indented under the class definition. Subject matter relating to processes for dyeing gelled fibers and product thereof.

(1) Note. Usually gelling of fibers occurs during the spinning of polyacrylonitrile or viscose from an aqueous bath. Drying and heating hardens the fibers and they lose their ready internal accessibility to dyes.

539 SYNTHETIC FIBER PRODUCED FROM MATERIAL WHICH CONTAINS PENDANT-COO-, -(O=)S(=O)-O-,-O-(O=)P(=O)-O-, PYRIDINO, DIALKYLAMINOALKYL-, OR QUATERNARY AMMONIUM RADICAL, DYEING PROCESS OR PRODUCT:

This subclass is indented under the class definition. Subject matter relating to compositions or processes for or products of dyeing synthetic fiber produced from material which contains at least one of the following pendant radicals: (1) -COO-; (2) -SO3-; (3) Dialkylaminoalkyl group; (4) Pyridine group; (5) PO4; (6) Quaternary ammonium group

540 Quaternary ammonium, pyridino, or dialkylaminoalkyl:

This subclass is indented under subclass 539. Subject matter wherein the fiber contains pendant quaternary ammonium, pyridino, or dialkylaminoalkyl groups.

(1) Note. The groups noted above provide basic fibers which are substantive to or dyed by sulfonated direct or acid dyes.

541 ACYLATING AGENT OR CROSS-LINKER DYE ADDITIVE, COMPOSITION, PROCESS, OR PRODUCT:

This subclass is indented under the class definition. Subject matter involving dye compositions or processes using acylating agents or cross-linking agent to assist dyeing or product thereof.

(1) Note. See the Glossary for a definition of the term cross-linker dye additive.

(2) Note. Diepoxides and diacylhalides are examples of cross-linkers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

543, for an agent which is a part of a reactive dye.

551, for ethylene imines.

542 Pretreatment of substrate:

This subclass is indented under subclass 541. Subject matter where the substrate is pretreated with the acylating agent or cross-linker.

543 REACTIVE DYE COMPOSITION, PROCESS, OR PRODUCT:

This subclass is indented under the class definition. Subject matter relating to dyeing with a reactive dye.

(1) Note. See the Glossary for the definition of a reactive dye.

544 1, 2-epoxy terminal group dye or halohydroxy dye, e.g., -CH(OH)-CHC1 containing:

This subclass is indented under subclass 543. Subject matter using a 1,2-epoxy terminated dye or halohydroxy alkylene dye, i.e., dye containing a -C(OH)-CC1-group.

546 Thiosulfato group containing dye:

This subclass is indented under subclass 543. Subject matter using thiosulfato group containing dyes, e.g., -S-SO3Na, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

652, sulfur dyes which change by reduction to thiosulfato dyes

547 Quaternary ammonium group containing dye:

This subclass is indented under subclass 543. Subject matter using a reactive dye containing an alkylene quaternary ammonium group.

(1) Note. Included herein is an amine assisted reactive dye which forms the quaternary ammonium form of a reactive dye.

548 Alkylene phosphate or phosphite dye:

This subclass is indented under subclass 543. Subject matter using alkylene phosphate or phosphite dyes.

549 Alkylene sulfato, halotriazine, halodiazine, haloquinoxaline, or halopyrimidine dye:
This subclass is indented under subclass 543. Subject matter using alkylene sulfate, halotriazine, halodiazine, halopyrimidine or haloquinoxaline dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
543, for a vinyl sulfone.

550 ORGANIC ADDITIVE FOR DYE COMPOSITION, DYE COMPOSITION CONTAINING ORGANIC ADDITIVE, PROCESS OR PRODUCT; OTHER THAN EMULSIFIER, PH ADJUSTER OR STARCH OR GUM PRINT PASTE THICKENER:
This subclass is indented under the class definition. Subject matter involving organic dye additives (assistants) added to the dye to assist in or improve this dyeing.

(1) Note. Classification based on the following organic dye additives (assistants) is excluded from this subclass: (a) materials used merely as emulsifiers, e.g., conventional detergents, wetting agents, dispersing agents, fatty acid salts (soaps), etc.; (b) ph adjusters, e.g., buffers, alkali, or acid, etc.; (c) starch or gum when used merely as a print paste thickener; (d) sugars as diluents or bulking agents in preparing dye powders.

(2) Note. Where an additive such as an emulsifier, etc. excluded above, is disclosed to have another function, classification on the additive in this subclass is proper.

(3) Note. Included herein are organic solvents, mordants, plasticizers, carriers, inhibitors, etc., which are used to assist in dyeing.

(4) Note. Sugars which are nonpolymeric are classified in subclass 611 regardless of functional moieties therein, e.g., a nitrogen containing sugar would not be in subclass 602 but in subclass 611.

(5) Note. An additive added to the substrate at a different time from the dye is also here, except if an additive is incorporated into the substrate material before forming the substrate, e.g., as in the production of a resin to be spun into a fiber, then the classification is not based on that additive which is considered part of the substrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
618, for an inorganic additive.

551 Ethylenimine or polymer thereof or polyalkylene polyamine:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is an ehtylenmine or polymer derived therefrom or is a polyalky-lene polyamine.

552 Polymeric additive:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a polymer including liquid or solid polymers.

(1) Note. Conventional thickeners for print paste, i.e., starch or gums, are not placed here. The other dye additives control classification.

(2) Note. Nonprinting compositions with thickeners such as starch are herein. Functions of starch or gums other than print paste thickening are herein.

(3) Note. Cellulose esters and ethers are herein.

553 Derived form vinyl pyrrolidone or vinyl pyridine:
This subclass is indented under subclass 552. Subject matter wherein the polymeric additive is a polymer derived from vinyl pyridine or vinyl pyrrolidone.

554 Cationic polymer, e.g., aminated polymer without -COO-, -(O=)S(=O)-O, -O-(O=)P(=O)-O- groups, e.g., polyacrylamide, etc.:
This subclass is indented under subclass 552. Subject matter wherein a cationic polymer is employed as a dye assistant.

(1) Note. The criterion for a cationic polymer is the ability of acid dyes to be substantive thereto, i.e., to permanently dye the basic polymer.

(2) Note. See the Glossary for a definition of acid dye.

(3) Note. Polymers with amine groups with no acid groups, or polyamides are examples of cationic dyes.

555 Acrylamide or dialkylaminoalkylacrylate polymer:
This subclass is indented under subclass 554. Subject matter involving a polymer derived from acrylamide or a dialkylaminoalkylacrylate.

556 Cyanamide- or dicyandiamide- formaldehyde polymer:
This subclass is indented under subclass 554. Subject matter involving a polymer derived from the reaction of cyanamide and formaldehyde or dicyandiamide and formaldehyde.

SEE OR SEARCH THIS CLASS, SUBCLASS:
554, for a guanadine formaldehyde polymer.

557 Acid polymer, e.g., carboxylated or sulfonated polymer:
This subclass is indented under subclass 552. Subject matter wherein the polymeric additive is an acid polymer.

(1) Note. Generally, acidic polymers are, e.g., polymers with pendant or terminal COOH, SO3H, or SO4H P04H radicals, etc., or polymers noted as being acid polymers.

558 Acrylic acid polymer:
This subclass is indented under subclass 557. Subject matter wherein the organic polymer is derived from acrylic acid.

559 Carboxyalkylene cellulose:
This subclass is indented under subclass 557. Subject matter wherein the organic polymer is carboxyalkylene cellulose, e.g., carboxymethyl cellulose, etc.

560 Phenol-aldehyde polymer:
This subclass is indented under subclass 557. Subject matter wherein the organic polymer is a polymer derived from a phenol and an aldehyde.

561 Carbohydrate:
This subclass is indented under subclass 552. Subject matter wherein the organic polymer is a carbohydrate.

(1) Note. This subclass generally includes starch, gums, cellulose esters and ethers, etc., excluding starch or gum as a print paste thickener.

SEE OR SEARCH THIS CLASS, SUBCLASS:
611, for nonpolymeric saccharides, e.g., glucose, sucrose, etc.

562 Cellulose ester or cellulose ether:
This subclass is indented under subclass 561. Subject matter wherein the organic polymer is a cellulose ester or ether.

563 Polypeptide or protein:
This subclass is indented under subclass 552. Subject matter wherein the organic polymer is a polypeptide or protein.

(1) Note. Included herein are gelatin, glue, etc.

564 Lactam:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a lactam, e.g., pyrrolidone, etc.

565 Six-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a compound having a six-membered hetero ring, having two or more ring hetero atoms therein, at least one of which is nitrogen.

566 Triazines (including hydrogenated):
This subclass is indented under subclass 565. Subject matter wherein the organic additive is a compound containing a six-membered hetero ring containing three or more N- hetero atoms

therein and including hydrogenated compounds.

567 Diazines (including hydrogenated):
This subclass is indented under subclass 565. Subject matter wherein the organic additive is a six-membered hetero ring compound containing two N-hetero atoms including hydrogenated compounds.

568 Six-membered hetero ring consisting of one nitrogen and five carbon atoms:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a hetero compound having a six-member ring with only one N group therein.

569 Quinolines:
This subclass is indented under subclass 568. Subject matter wherein the organic additive is a quinoline.

570 Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen:
This subclass is indented under subclass 550. Subject matter wherein the organic agent contains a five-membered hetero ring which has at least two ring hetero atoms at least one of which is nitrogen.

571 Hetero N ring contains a sulfur atom (including hydrogenated):
This subclass is indented under subclass 570. Subject matter wherein the organic additive is a hetero compound having a five-membered ring with at least one nitrogen atom and at least one sulfur atom in the ring, e.g., a thiazole, etc., including hydrogenated compounds.

572 Hetero N ring contains an oxygen atom (including hydrogenated):
This subclass is indented under subclass 570. Subject matter wherein the organic additive is a hetero compound having a five-membered ring with at least one nitrogen atom and at least one oxygen atom in the ring, e.g., an oxazole, etc., including hydrogenated compounds.

573 Hetero N ring contains at least two nitrogen hetero atoms (including hydrogenated):
This subclass is indented under subclass 570. Subject matter wherein the organic additive is a hetero compound having a five-membered ring with at least two nitrogen atoms in the ring, e.g., a diazole, etc., including hydrogenated compounds.

574 Five-membered hetero ring consisting of one nitrogen and four carbon atoms:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a compound with a five-membered ring containing one nitrogen and four carbons in the ring, including hydrogenated compounds.

(1) Note. This subclass includes poly- carboxylic acid imides, e.g., phthalimide.

575 Sulfur-containing hetero ring:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a compound with a sulfur-containing hetero ring.

576 Oxygen-containing hetero ring:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a compound with an oxygen-containing hetero ring.

(1) Note. Included herein are, e.g., epoxides, cyclic carbonates, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
611, for a glucoside.

577 Furyl (including hydrogenated):
This subclass is indented under subclass 576. Subject matter containing furyl or hydrofuryl compounds.

578 Lactones:
This subclass is indented under subclass 576. Subject matter containing a lactone.

579 Hetero ring is six-membered consisting of one oxygen and five carbons:
This subclass is indented under subclass 576. Subject matter wherein the organic additive is a six-membered ring compound with one oxygen and five carbons in the ring.

580 Fats, higher fatty acids or esters, oils or waxes, other than nitrogen-containing:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a fat, higher fatty acid ester, oil or wax and which does not contain a nitrogen atom.

(1) Note. The oils or fats herein are generally triglycerides, e.g., vegetable oil, etc.

(2) Note. Higher fatty acids for the purposes of this subclass are considered to be monocarboxylic acids of eight or more carbons.

581 Silicon-containing:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains at least one silicon atom.

582 Carboxylic acid esters, cyanates, isocyanates, or sulfur analogues thereof:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains a carboxylic acid ester group, cyanate group, or isocyanate group or sulfur analogue thereof.

583 Aromatic:
This subclass is indented under subclass 582. Subject matter wherein the organic additive is aromatic.

584 Phosphorous-containing:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains at least one atom of phosphorus.

(1) Note. Phosphonium, phosphene, phosphate, phosphoryl compounds, etc., are classified here.

585 Ureas, thioureas, pseudoureas, or pseudothioureas:
This subclass is indented under subclass 550. Subject matter using ureas, thioureas, pseudoureas, or pseudothioureas.

586 Carboxamides or thiocarboxamides:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a compound which contains a carboxamide or thiocarboxamide group.

587 Sulfur-containing:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains at least one sulfur atom, e.g., sulfonium, suifones, etc.

588 Sulfonic acids or sulfonic acid esters:
This subclass is indented under subclass 587. Subject matter wherein the organic additive contains a sulfonic acid or sulfonic acid ester group.

589 Aromatic:
This subclass is indented under subclass 588. Subject matter wherein the sulfur additive contains an aromatic group.

590 Amino:
This subclass is indented under subclass 589. Subject matter wherein the organic additive compound contains an amine group, e.g., sulfanilic acid, etc.

591 Acyclic:
This subclass is indented under subclass 588. Subject matter wherein the organic additive compound is acyclic, e.g., taurine, etc.

592 Sulfamic or sulfinic acids, salts, or esters:
This subclass is indented under subclass 587. Subject matter wherein the organic additive contains a sulfamic acid or sulfonic acid group or a salt or ester thereof.

593 Sulfonamides:
This subclass is indented under subclass 587. Subject matter wherein the organic contains a sulfonamide group.

594 Carboxylic acid or salt thereof:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a carboxylic acid or salt thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
580, for higher fatty acids, i.e., monocarboxylic acids having eight or more carbons in the chain.

595 Tannins or tannic acid:
This subclass is indented under subclass 594. Subject matter wherein the organic additive includes tannins or tannic acid.

(1) Note. Nutgall contains tannic acid and is classified herein.

596 Contains heavy metal:
This subclass is indented under subclass 595. Subject matter including a heavy metal in the organic additive.

597 Amine:
This subclass is indented under subclass 594. Subject matter wherein the organic additive carboxylic acid or salt compound contains an amine group.

598 Acyclic:
This subclass is indented under subclass 594. Subject matter wherein the carboxylic acid or salt compound is acyclic.

(1) Note. Acyclic is compound which contains no ring system.

599 Hydroxy-containing:
This subclass is indented under subclass 598. Subject matter wherein the organic additive contains a hydroxy carboxylic acid or salt.

600 Heavy metal-containing:
This subclass is indented under subclass 598. Subject matter where the carboxylic acid or salt contains a heavy metal atom.

601 Halogen-containing:
This subclass is indented under subclass 598. Subject matter wherein the organic additive contains a halogen atom.

602 Nitrogen-containing, other than nitro or nitroso:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains a nitrogen atom which is other than nitro or nitroso.

603 Nitrile:
This subclass is indented under subclass 602. Subject matter wherein the organic additive contains a nitrile group.

604 Amino alkanol:
This subclass is indented under subclass 602. Subject matter wherein the nitrogen is in the form of an amino alkanol.

(1) Note. Included herein are the reaction products of alkylene oxides and amines.

605 Anilines:
This subclass is indented under subclass 602. Subject matter wherein the organic additive contains an aniline-type group.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406, and 649, for anilines as oxidation dyes.
602, for benzyl amines.

606 Quaternary ammonium compound:
This subclass is indented under subclass 602. Subject matter wherein the organic additive contains a quaternary ammonium compound.

607 Ketone:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a ketone.

608 Aldehyde:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is an aldehyde.

609 Ether:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is an ether.

610 Aryl ether:
This subclass is indented under subclass 609. Subject matter wherein the ether is an aryl ether.

611 Alcohol:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is an alcohol.

(1) Note. Sugars are grouped here even though they may contain groups in subclasses above; see note in subclass 550.

612 Chlorohydrin:
This subclass is indented under subclass 611. Subject matter wherein the organic additive is a chlorhydrin (chlorohydrin).

(1) Note. A chlorhydrin is a compound containing both -CL and -OH radicals.

613 Phenols:
This subclass is indented under subclass 611. Subject matter wherein the organic additive is a phenol-type compound.

614 Halogen-containing:
This subclass is indented under subclass 550. Subject matter wherein the organic additive contains at least one halogen atom.

615 Fluorine:
This subclass is indented under subclass 614. Subject matter containing at least one atom of fluorine.

616 Aromatic:
This subclass is indented under subclass 614. Subject matter wherein the organic additive contains an aryl group.

(1) Note. Included herein are halogenated benzene and napthalene assistants.

617 Hydrocarbon:
This subclass is indented under subclass 550. Subject matter wherein the organic additive is a hydrocarbon.

618 INORGANIC ADDITIVE FOR DYE COMPOSITION, DYE COMPOSITION CONTAINING INORGANIC ADDITIVE, PROCESS OR PRODUCT; OTHER THAN EMULSIFIER, PH ADJUSTER, WATER, NITROUS ACID FOR AZO COUPLING OR SULFUR DYE:
This subclass is indented under the class definition. Subject matter involving inorganic dye additives (assistants) which are added to the dye to assist in or improve the dyeing.

(1) Note. Classification based on the following Inorganic dye additives (assistants) is excluded from this subclass: (a) materials used merely as emulsifiers, e.g., conventional detergents, wetting agents, dispersing agents, Glauber's salt, etc. (b) pH adjusters, e.g., buffers, alkall, or acid, etc. (c) water; (d) nitrous acid for azo coupling; (e) sulfur reducing agent for vat or sulfur dye.

(2) Note. An additive added to the substrate at a different time from the dye is also here, except if an additive is incorporated into the substrate material before forming the substrate, then the classification is not based on that additive which is considered part of the substrate.

(3) Note. A statement that a fiber is metal modified or incorporates a metal is assumed to mean a metal after treatment and thereby the metal is considered an assistant for this subclass.

(4) Note. Metallic compounds used for weighting and those used for mordanting may be the same, the difference being only in the amount or agent incorporated.

(5) Note. Inorganic mordanting or weighting compositions are included herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
443, for weighting processes.

619 Ammonia:
This subclass is indented under subclass 618. Subject matter wherein the inorganic assistant is ammonia.

620 Ammonium salt:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive is an ammonium salt.

621 Molybdenum, uranium or tungsten (wolfram):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one atom from the group tunsten, molybdenum or uranium.

622 Group VA metal (As, Sb, Bi):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one atom of a Group VA metal, i.e., As, Sb, or Bi.

623 Group VIII metal (Fe, Co, Ni, Os, Ir, Pt, Ru, Rh, Pd):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group VIII metal atom, i.e., iron, cobalt, nickel, ruthenium, rhodium, palladium, osmium, iridium, or platinum.

624 Group IB metal (Cu, Ag, Au):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive additive contains at least on Group IB (Cu, Ag, Au) metal atom.

625 Group IIIA metal (Al, Ga, In, Ti):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group IIIA (Al, Ga, In, Ti) Metal atom.

626 Group IV metal (Sn, Pb, Ge, Ti, Zr, Hf):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group IV (Sn, Pb, Ge, Ti, Zr. Hf) metal atom.

627 Group VB metal (V, Nb, Ta):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group VB metal (V, nb, Ta) atom.

628 Group VII metal (Mn, Tc, Re):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group VII (Mn, Tc, Re) metal atom.

629 Group IIB metal (Zn, Cd, Hg):
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one Group IIB (Zn, Cd, Hg) metal atom.

630 Boron:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one boron atom.

631 Nitrogen:
This subclass is indented under subclass 618. Subject matter wherein the additive is an inorganic nitrogen compound.

632 Silicon:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one silicon atom.

633 Phosphorus:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one phosphorus atom.

(1) Note. Monophosphates and phosphoric acid are generally excluded herefrom as being mere pH adjusting agents, however, when other uses are disclosed for these material classification herein is proper.

634 Halogen acids:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive is a halogen containing acid.

(1) Note. Use merely as a pH adjuster is excluded herefrom.

635 Chromium:
This subclass is indented under subclass 618. Subject matter wherein the inorganic additive contains at least one chromium atom.

636 DYE OR POTENTIAL DYE COMPOSITION, ADDITIVE TREATMENT, PROCESS, PRODUCT, OR ANCILLARY DYE OPERATION:
This subclass is indented under the class definition. Subject matter involving compositions containing dyes or other additives not provided for above including potential dye components, dyeing processes or treatments related thereto, products or other ancillary dye operations.

(1) Note. This is the subclass for miscellaneous compositions or operations related

to dyeing which are not specifically provided for elsewhere.

637.1 Pigments used as dyes (imbibition of a pigment):
This subclass is indented under subclass 636. Subject matter wherein a pigment is used as a dye.

(1) Note. This subclass takes coloring with a pigment wherein the coloring is by imbibition, i.e., absorption of the pigment by the substrate.

638 Mixed dyes, noncomplexed:
This subclass is indented under subclass 636. Subject matter wherein more than one dye is used and wherein the dyes may be applied simultaneously or sequentially.

(1) Note. The mixed dyes for this area are not complexed, e.g., when two azo dyes complex with a heavy metal they are not included herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
408, for combination of aniline colors oxidized on hair.
478, for effect coloring processes which may involve the use of several dyes.
529, for dyeing mixed materials with several dyes.

639 Azo:
This subclass is indented under subclass 638. Subject matter in which at least one of the dyes is an azo dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
662, wherein a vat dye compound chemically combines (couples) with an azo dye component to form a true chemical compound as a single dye, and no other azo coupling component or vat or sulfur dye is present.

640 With sulfur dye or vat dye:
This subclass is indented under subclass 639. Subject matter in which both an azo and a vat or sulfur dye are present.

(1) Note. See the Glossary for the definition of a vat dye and of a sulfur dye.

641 Sulfonated azo:
This subclass is indented under subclass 639. Subject matter containing a sulfonated azo dye.

642 Sulfur dye or vat dye:
This subclass is indented under subclass 638. Subject matter in which at least one vat or sulfur dye is present.

(1) Note. See the Glossary for the definition of a vat dye or a sulfur dye.

643 Anthraquinone dye:
This subclass is indented under subclass 638. Subject matter wherein at least one of the dyes is an antraquinone dye.

644 Basic dye:
This subclass is indented under subclass 638. Subject matter wherein at least one basic dye is included.

(1) Note. See the Glossary for the definition of a basic dye.

645 Inorganic dye (mineral dye):
This subclass is indented under subclass 636. Subject matter wherein inorganic dye materials only are employed, which may coact to form an insoluble compound in the substrate.

646 Dye extracted from natural product:
This subclass is indented under subclass 636. Subject matter containing a natural dye.

(1) Note. Natural dyes are extracts of plants or animal obtained with no or very little chemical processing.

647 Polymeric dye, e.g., a chromophore pendant from an addition polymer, etc.:
This subclass is indented under subclass 636. Subject matter wherein a polymeric dye (polymer containing a chromophore) is used.

(1) Note. Oxidation dyes may polymerize but are excluded herefrom.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406, and 649, for oxidation dyes.

648 Fluorescent dye, e.g., stilbene, benzimidazole, benzoxazole, benzothiazole, pyrazoline dye, etc., optical brightener or bluing agent:
This subclass is indented under subclass 636. Subject matter containing a fluorescent dye, e.g., stilbene, benzimidazole, benzoxazole, benzothiazole, pyrazoline dye, etc., bluing agents, or optical brighteners applied as dyes.

(1) Note. Methods of applying optical brighteners in the same manner as a dye are here. Where the optical brightener functions as a pigment the method goes in subclass 427.

SEE OR SEARCH THIS CLASS, SUBCLASS:
137, for methods of laundering involving a bluing step.

SEE OR SEARCH CLASS:
106, Compositions: Coating or Plastic, particularly subclasses 206.1+ and 238 for bluing sizes.
252, Compositions, subclasses 301.21+ for optical brightener composition.
427, Coating Processes, subclasses 157+ for application of fluorescent materials or optical brighteners as a pigment coating.

649 Oxidation dye, e.g., aniline, nitroaniline, etc.:
This subclass is indented under subclass 636. Subject matter involving an oxidation dye.

(1) Note. See the Glossary for the definition of oxidation dye.

SEE OR SEARCH THIS CLASS, SUBCLASS:
406, for dyeing hair and skin by oxidation dyes.
672, for azo dyes oxidized on fibers.

650 Sulfur dye or vat dye:
This subclass is indented under subclass 636. Subject matter containing a vat or sulfur dye.

(1) Note. See the Glossary for a definition of a vat dye.

651 Soluble leuco ester salts:
This subclass is indented under subclass 650. Subject matter employing derivatives of vat dyes, in the form of soluble ester salts or their leuco compounds.

(1) Note. For example, a quinionic vat dye reduced to the hydroquinone form (OH) and esterified with a sulfoated aromatic compound to solubilize the insoluble vat dye.

652 Sulfur dye (sulfur-organic reaction product dye):
This subclass is indented under subclass 650. Subject matter involving a sulfur dye.

(1) Note. See the Glossary for a definition of sulfur dye.

653 Indigoid dye:
This subclass is indented under subclass 650. Subject matter employing natural or synthetic indigo and its derivatives or analogs (e.g., thioindigo) and which contain essentially the group -C(=0)-C=C-C(=0)- or its isomers or products converted to the same in dyeing.

SEE OR SEARCH CLASS:
548, Organic Compounds, subclasses 450, 457 459, 464, and 488 for indigoid dye compounds.
549, Organic Compounds, subclasses 45 and 52 for thioloindigoid dye compounds.

654 Basic (cationic) dye containing strongly basic onium or alkylene imine group:
This subclass is indented under subclass 636. Subject matter containing a basic dye characterized by a strongly basic onium group or an alkylene imine group.

655 Heterocyclic onium group, e.g., pyridinium, etc.:
This subclass is indented under subclass 654. Subject matter containing heterocyclic onium group, e.g., pyridinium dyes, etc.

657 Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, napthoperinone, quinophthalone, etc., group-containing:
This subclass is indented under subclass 636. Processes wherein a basic or cationic dye is used.

(1) Note. See the Glossary for a definition of basic dye.

658 Acid dye form, e.g., with sulfonic acid group, etc.:
This subclass is indented under subclass 657. Subject matter wherein the basic dye contains an acid or salt group, e.g., sulfonate, etc.

659 Methine group:
This subclass is indented under subclass 657. Subject matter wherein the dye contains a methine group.

661 Phthalocyanine dye:
This subclass is indented under subclass 636. Subject matter wherein a phthalocyanine dye is used.

662 Axo, acridone, or quinone dye:
This subclass is indented under subclass 636. Subject matter wherein a dye containing an azo, acridone, or quinone group is used.

SEE OR SEARCH THIS CLASS, SUBCLASS:
650, for quinonic vat dyes.

SEE OR SEARCH CLASS:
534, Organic Compounds, subclasses 550+ for the compounds, per se.

663 Naphtoquinone dye:
This subclass is indented under subclass 662. Subject matter wherein a napthoquinone dye is used.

664 Stabilized or potential diazo compound:
This subclass is indented under subclass 662. Subject matter in which a diazo compound stabilized by admixture, or a stable derivative of a diazo compound or a compound easily converted to a diazo solution in the dyeing process is employed.

(1) Note. Includes such compositions as anti-diazo sulphonates.

(2) Note. Preparation and process for dyeing involving stable and stabilized amino compounds requiring diazotization with nitrite to convert the same to diazo compounds, are not included here but in an appropriate subclass under subclass 666.

SEE OR SEARCH THIS CLASS, SUBCLASS:
666, for preparation and processes for dyeing involving stable and stabilized amino compounds requiring diazotization with nitrite to convert the same to diazo compounds.

SEE OR SEARCH CLASS:
534, Organic Compounds, subclasses 558 through 565 for the compounds, per se.

665 Nitrosamine or N-diazo:
This subclass is indented under subclass 664. Subject matter in which the diazo derivative is a nitrosamine or a diazo-N-amino (includes imino) compound.

(1) Note. For example, nitrosamine is -N-N=O and N-diazo is-N-N=N-.

SEE OR SEARCH CLASS:
534, Organic Compounds, subclasses 550 through 555 for the compounds, per se.

666 Azo developed on the fiber:
This subclass is indented under subclass 662. Subject matter wherein an azo dye is prepared on a fiber by a developer process involving either the application of the amine followed by the diazotization and coupling on the fibers or impregnation with either the diazo component or the coupling component followed by the other in either sequence.

(1) Note. Where the amine is also an azo dye that is further developed by diazotization on the material, it is also placed here and not in the direct dyeing subclasses.

667 Nitroaromatic component:
This subclass is indented under subclass 666. Subject matter wherein one azo dye component contains a nitro group directly bonded to a carbon of an aromatic ring.

668 Pyrazolone component:
This subclass is indented under subclass 666. Subject matter wherein one azo dye component is a pyrazolone.

669 Polyazo component:
This subclass is indented under subclass 666. Subject matter containing a polyazo dye component or a polyazo dye is formed.

(1) Note. Polyazo (diazo) is a compound containing more than one -N=N- group.

670 Heterocyclic component:
This subclass is indented under subclass 666. Subject matter wherein one dye component contains a heterocyclic group.

671 Me-C(=O)-CH-C(=O)- group containing:
This subclass is indented under subclass 666. Subject matter wherein an azo dye component contains a Me-C(=O)-CH-C(=O)- group.

672 Dye containing removable solubilizing group, e.g., lactam radical, etc., or the dye is oxidized to insolubilize:
This subclass is indented under subclass 662. Subject matter in which an azo dye or derivative thereof is applied followed by a treatment to render the same insoluble, generally, by conversion to a more in soluble compound.

(1) Note. For example, conversion to a more insoluble compound may be by such processes as lactamizing or the splitting off of a solubilizing group or by oxidation.

673 Dye containing -COOH:
This subclass is indented under subclass 662. Subject matter wherein a dye contains -COOH groups.

674 Metallized, heavy metal:
This subclass is indented under subclass 673. Subject matter containing a heavy metal atom.

675 Anthraquinone dye:
This subclass is indented under subclass 662. Subject matter involving an anthraquinone dye.

(1) Note. For example, included herein are the alizarine type, amino-anthraquinone, or lactam forming anthraquinone compounds.

SEE OR SEARCH THIS CLASS, SUBCLASS:
445, for patents restricted to significant printing with these dyes.
638, for dyeing alternatively with another dye and an anthraquinone.
650, for anthraquinone dyes of the vat-type.

SEE OR SEARCH CLASS:
544, Organic Compounds, subclasses 187+ for anthraquinone dye compounds.
548, Organic Compounds, subclasses 300.4 and 356.5+ for anthraquinone dye compounds.

676 Sulfonic acid or salt thereof or sulfonamide:
This subclass is indented under subclass 675. Subject matter containing a sulfonated anthraquinone dye or salt thereof or sulfonamide group containing anthraquinone dye.

677 Heterocyclic group:
This subclass is indented under subclass 675. Subject matter wherein an anthraquinone dye contains a heterocyclic group (on the anthraquinone nucleus).

678 Phenoxy, phenol, mercapto, alkoxy, or thioalkyl group:
This subclass is indented under subclass 675. Subject matter wherein the anthraquinone dye contains a phenoxy-, hydroxphenyl, mercapto (-SH), alkoxy, or thioalkyl group.

679 Anilino group on the anthraquinone nucleus:
This subclass is indented under subclass 675. Subject matter containing an anilino group on the anthraquinone nucleus.

680 Dye containing -(O=)S(=O)-O-, -O(O=)S(=O)-O- or phosphorous oxide group:
This subclass is indented under subclass 662. Subject matter wherein a dye contains a -SO3-, -SO4- or other phosphorus oxide group.

(1) Note. Included herein are sulfonated dyes and salts and esters thereof.

681 Sulfonated azo:
This subclass is indented under subclass 680. Subject matter wherein an azo dye contains an -SO3- group.

682 Monoazo:
This subclass is indented under subclass 681. Subject matter wherein the sulfonated dye contains a single azo group.

683 Monosulfonated:
This subclass is indented under subclass 682. Subject matter containing monosulfonated monoazo dyes.

684 Heterocyclic:
This subclass is indented under subclass 683. Subject matter wherein the dye contains a heterocyclic group.

685 Metallized dye, including metallization during dyeing (i.e., including in situ forming of metallized dye):
This subclass is indented under subclass 662. Subject matter containing metallized dyes, i.e., dyes combined with a metal.

(1) Note. Included herein is combination of dye and metal on the substrate, i.e., in situ.

686 Heterocyclic:
This subclass is indented under subclass 685. Subject matter containing a heterocyclic metallized dye.

687 Polyazo dye:
This subclass is indented under subclass 662. Subject matter containing a polyazo dye.

(1) Note. A polyazo (disazo) dye is a dye containing more than one -N=N- group. Diazo does not mean polyazo.

688 Six-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen:
This subclass is indented under subclass 662. Subject matter wherein a dye contains a hetero ring having two or more ring hetero atoms at least one of which is nitrogen.

689 Diazines (including hydrogenated):
This subclass is indented under subclass 688. Subject matter wherein the hetero ring contains two nitrogen atoms, including hydrogenated compounds.

690 Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen:
This subclass is indented under subclass 662. Subject matter wherein the dye contains a five-membered hetero ring having two or more ring hetero atoms at least one of which is nitrogen.

691 Thiazoles (included hydrogenated):
This subclass is indented under subclass 690. Subject matter wherein at least one of the atoms in the ring besides nitrogen and carbon is sulfur, including hydrogenated compounds.

692 Diazoles or triazoles (including hydrogenated):
This subclass is indented under subclass 690. Subject matter containing a dye having a five-membered ring with at least two nitrogen hetero atoms therein, including hydrogenated compounds.

693 -COO-alkyl or -COO-aryl hydrocarbon:
This subclass is indented under subclass 662. Subject matter wherein the dye contains a -COO-alkyl or -COO-aryl hydrocarbon group.

694 Aryl-(O=)S(=O)-N-:
This subclass is indented under subclass 662. Subject matter wherein the dye contains an aryl-SO2-N- group.

695 HO-C-C-N:
This subclass is indented under subclass 662. Subject matter wherein the dye contains an -N-CCOH group.

696 Carbonyl bonded directly to nitrogen:
This subclass is indented under subclass 662. Subject matter wherein the dye contains a -C(=O)-N- group.

CROSS-REFERENCE ART COLLECTIONS

The following subclasses are collections of published disclosures pertaining to various specified aspects of the dye art which aspects do not form appropriate bases for subclasses in the foregoing classification (i.e., subclasses 400 - 696), wherein original copies of patents are placed on another basis. These subclasses may be of further assistance to the searcher, either as a starting point in searching this class or as an indication of further related fields of search inside or outside the class. Thus, there is here provided a further path of access for retrieval of a limited number of types of disclosures.

Disclosures are placed in these subclasses for their value as references and as leads to appropriate main or secondary fields of search, without regard to their original classification or their claimed subject matter.

The disclosures found in the following subclasses are examples, only, of the indicated subject matter, and in no instance do they represent the entire extent of the prior art.

900 BASIC EMULSIFIERS FOR DYEING:
Basic emulsifiers are surface active agents which will neutralize acids and precipitate acid dyes to form solvent dyes or turn indicator paper to the appropriate color for an alkaline reagent.

901 Quaternary ammonium salts:
This subclass is indented under subclass 900. Emulsifiers wherein the emulsifier is a quaternary ammonium salt.

902 COACERVATION OR TWO-PHASE DYEING SYSTEM:
Compositions or dyeing involving coacervation or multiple phases in dyeing.

903 TRIPLE MIXTURE OF ANIONIC, CATIONIC, AND NONIONIC EMULSIFIERS FOR DYEING:
Compositions containing anionic, cationic, and nonionic emulsifiers.

904 MIXED ANIONIC AND NONIONIC EMULSIFIERS FOR DYEING:
Compositions containing both anionic and nonionic emulsifiers.

905 MIXED ANIONIC AND CATIONIC EMULSIFIERS FOR DYEING:
Compositions containing both anionic and cationic emulsifiers.

906 MIXED CATIONIC AND NONIONIC EMULSIFIERS FOR DYEING:
Compositions containing both cationic and nonionic emulsifiers.

907 NONIONIC EMULSIFIERS FOR DYEING:
Nonionic emulsifiers for dyeing such as polyalkylene oxides and ethers are collected here.

908 ANIONIC EMULSIFIERS FOR DYEING:
Anionic emulsifiers or compositions containing such dyeing, including phosphates or polyalkylene oxides, dicarboxylic acids, etc.

909 Sulfonated or sulfated alphatic hydrocarbons:
This subclass is indented under subclass 908. Emulsifiers including sulfonated or sulfated alphatic hydrocarbons, e.g., lauryl sulfate, etc.

910 Soap:
This subclass is indented under subclass 908. Emulsifiers for dyeing containing soaps, e.g., fatty acid salts.

911 Sulfonated:
This subclass is indented under subclass 910. Soap which are sulfonated.

912 Arylene sulfonated-formaldehyde condensate or alkyl aryl sulfonate:
This subclass is indented under subclass 908. Emulsifiers involving arylene sulfonate-formaldehyde condensate or alkyl aryl sulfonate.

913 AMPHOTERIC EMULSIFIERS FOR DYEING:
Amphoteric emulsifiers for dyeing, i.e., emulsifiers having both acid and basic properties.

914 Amino carboxylic acids:
This subclass is indented under subclass 913. Compositions containing amino carboxylic acids.

915 Amino sulfonic acids:
This subclass is indented under subclass 913. Compositions containing amino sulfonic acids.

916 NATURAL FIBER DYEING:
Subject matter related to dyeing of natural fiber material.

917 Wool or silk:
This subclass is indented under subclass 916. Subject matter involving wool or silk.

918 Cellulose textile:
This subclass is indented under subclass 916. Subject matter involving cellulose textile.

919 Paper:
This subclass is indented under subclass 916. Subject matter involving dyeing or paper.

920 SYNTHETIC FIBER DYEING:
Subject matter related to dyeing of synthetic fiber.

921 Cellulose ester or ether:
This subclass is indented under subclass 920. Subject matter involving cellulose ester or ether fiber.

922 Polyester fiber:
This subclass is indented under subclass 920. Subject matter involving dyeing of polyester fiber material.

923 Halopolyester:
This subclass is indented under subclass 922. Subject matter wherein the polyester contains a halogen atom.

924 Polyamide fiber:
This subclass is indented under subclass 920. Subject matter involving dyeing of polyamide fiber.

925 Aromatic polyamide:
This subclass is indented under subclass 924. Subject matter wherein the polyamide is derived from an aromatic compound.

926 Polyurethane fiber:
This subclass is indented under subclass 920. Subject matter involving dyeing of a polyurethane.

927 Polyacrylonitrile fiber:
This subclass is indented under subclass 920. Subject matter involving dyeing of polyacrylonitrile fiber.

928 Polyolefin fiber:
This subclass is indented under subclass 920. Subject matter involving olefin polymers.

929 CARPET DYEING:
Subject matter involving dyeing of carpet.

930 PRETREATMENT BEFORE DYEING:
Subject matter involving pretreatment of material before dyeing.

931 Washing or bleaching:
This subclass is indented under subclass 930. Subject matter involving washing or bleaching.

932 SPECIFIC MANIPULATIVE CONTINUOUS DYEING:
Subject matter involving unusual or detailed manipulative steps in dyeing.

933 THERMOSOL DYEING, THERMOFIXATION OR DRY HEAT FIXATION OR DEVELOPMENT:
Dyeing involving thermofixation (dry heat fixation or development) or thermosol dyeing.

934 HIGH TEMPERATURE AND PRESSURE DYEING:
Unusual dyeing processes involving high pressure and temperature.

935 IMMUNIZATION AS A RESIST IN DYEING:
Subject matter wherein immunization is employed as resist.

936 SOLUBILITY STUDIES ON DYES:
Subject matter concerning solubility of dyes.

937 LI ION IN DYE BATH:
Employment of a Li ion in the dye bath.

938 SOLVENT DYES:
Collection of materials related to the subject of solvent dyes.

939 NAPHTHOLACTAM DYE:
Subject matter related to naphtholactam dyes.

END