A tanning agent is anything that can combine with skin more or less irreversibly, rendering it immune to bacterial attack and raising the hydrothermal shrinkage temperature. When collagen (raw skin) is heated gradually in water, it shrinks at about 60°C, and on further heating it dissolves as gelatin. Tanning raises the shrinkage temperature depending on the method of tanning. Some chrome-tanned leather withstands boiling. The tanning agent also prevents the collagen fibres from sticking together on drying so that the product is porous, soft and flexible. The tanning agents are numerous and diverse. The principal commercial tanning agents are:

1. Vegetable tannins—extracts of barks, wood, leaves and fruits;
2. Mineral tanning agents (complex salts of chromium, aluminium, iron and uranium);
3. Aldehydes chiefly formaldehyde;
4. Oxidizable salts, and
5. Syntans (various types)

This invention relates to the use of polyhydroxy-spiro-bis-indane tanning agents in silver halide photography.

A water soluble shrunken grain synthetic tanning agent in substantially monomeric form is obtained by reaction of a dihydroxy diphenyl sulfone, formaldehyde and naphthalene sulfonic acid in aqueous solution. Molar proportions of reactants are selected to obtain a reaction product having at least 0.5 free methylol groups per mole of sulfone. Reaction is effected at temperatures of from about 20°C to about 150°C until a clear solution is obtained.
Tanning (hardening) agents in a colloid layer of gelatin or the like are inactive at ordinary temperatures but are activated at temperatures above 70°C to rapidly tan the colloid in which they are incorporated. Suggested uses are in thermography and photography. Specific examples describe various gelatin layers containing the heat-activated hardeners.

**Shrunken grain leather is produced by introducing an aqueous solution of a water soluble synthetic tanning agent in substantially monomeric form obtained by reaction of a dihydroxy diphenyl sulfone, formaldehyde and naphthalene sulfonic acid in aqueous solution into a drum containing a skin and water, and thereafter drumming the skin with the tanning agent until the agent is exhausted into the skin. Animal skins, pickled skins, partially tanned skins, partially dechromed skins and dechromed skins can be used.**

**Processes for pretanning, tanning and retanning leather use an all purpose synthetic tanning agent, which is obtained by condensing formaldehyde and a phenol with a sulfonated condensate of formaldehyde and mixed phenols. The tanning agent is produced by condensing mixed phenols with formaldehyde, sulfonating the condensate and thereafter condensing the sulfonated condensate with formaldehyde and a phenol.**
Light-sensitive photographic materials are provided in the light-sensitive silver halide emulsion layer or in a separate colloid layer in water-permeable relationship with the emulsion layer, with a tanning development agent precursor constituted by an O-dihydroxybenzene derivative having at least one of its hydroxyl groups esterified to form a halogenated acyloxy group or etherified to form an α-tetrahydroxyphenyloxy group. Such precursor compounds are stable during storage and do not result in discoloration of the emulsion layer. On treatment with an alkaline activating liquid, a tanning photographic developing agent is released. The O-dihydroxybenzene derivatives per se are also discussed.

Leather treating agents which are (a) reaction products of hydroxyl containing nitrogen compounds and isocyanate terminated urethane prepolymers or (b) reaction products of hydroxyl containing nitrogen compounds and isocyanate terminated urethane prepolymers further reacted with acids or quaternizing reagents to produce an acid addition salt or a quaternary ammonium salt.

The invention pertains to a rest inhibitor consisting of tannic acid and additives, acid inhibitor comprising at least a tannic acid, a catalyst capable of imitating the chelation of iron atoms and cross-linking agent.
INVENTOR(S): HERST ENDRES, OTTO HERTEL, FRANZ-FRIEDRICH MILLER
TITLE: WATER-SOLUBLE SYNTHETIC TANNING AGENTS
Water-soluble synthetic tanning agents composed of formaldehyde condensation products of non-sulfonated aromatic hydroxy compounds or the sulfomethylation products thereof with aromatic sulfonic acids or with the formaldehyde condensation products of said sulfonic acids.

PAT NO: 3852374 APP DATE: 24-11-72
APP NO: 309471 INT CLASS: C14c 3/20, C08g 37/16
ASSIGNEE(S): BADIASCHE ANLLIN AND SODA FABRIK AKTIENGESE LLSCHAFT, LUDWIGSHAFEN RHEIN, GERMANY
INVENTOR(S): HANS ERDMANN HEIDELBERG, FRANZ-FRIEDLRC H MILLER, LUDWIGSHAFEN, ALFRED ZINSEL, FRANKENTHAL

TITLE: TANNING AGENTS
The production of tanning agents based on condensation products of formaldehyde, phenol-sulfonic acids, nitrogenous compounds and bisulfite.

PAT NO: 3852431 APP DATE: 11-12-72
APP NO: 314038 INT CLASS: C01c 1/24
ASSIGNEE(S): DAVID LAZAREVICH MOTOV, ETAL
INVENTOR(S): DAVID LAZAREVICH MOTOV, ETAL
TITLE: METHOD OF OBTAINING TITANIUM TANNING AGENT AND ITS APPLICATION FOR TANNING HIDES, PELTS AND FUR SKINS
A method of obtaining a titanium tanning agent, based essentially upon sulfuric-acid treatment of titaniferous material followed by precipitating from titanium sulfate solution ammonium titanyl double sulfate monohydrate with subsequent treatment of that salt with ammonium sulfate solution to obtain the compound of titanium sulfate as a tanning agent. Methods of tanning using conventional techniques require up to 10 per cent of the titanium tanning agent by weight of the pelt calculated as TiO₂.

PAT NO: 3938951 APP DATE: 20-3-73
APP NO: 343120 INT CLASS: C14C 3/04
ASSIGNEE(S):
INVENTOR(S): DAVID LAZAREVICH MOTOV, ETAL
TITLE: METHOD OF OBTAINING TITANIUM TANNING AGENT AND ITS APPLICATION FOR TANNING HIDES, PELTS AND FUR SKINS
A method of obtaining a titanium tanning agent, based essentially upon sulfuric acid treatment of titaniferous material followed by precipitating from titanium sulfate solution, ammonium titanyl double sulfate monohydrate with subsequent treatment of that salt with ammonium
sulfate solution to obtain the compound of titanium sulfate as a tanning agent. Methods of tanning using conventional techniques require up to 10 percent of the titanium tanning agent by weight of the pelt calculated as TiO₂.

**PAT NO :** 4009996  **APP DATE :** 5-11-74

**APP NO :** 520995  **INT CLASS :** C08C 75/20, C08G 75/24, C14C 3/20

**ASSIGNEE(S) :** CIBA-GEIGY CORPORATION, ARDSLEY, NY

**INVENTOR(S) :** ALBERT WILRMLI, RIEHEN

**TITLE :** REACTION PRODUCTS OF PHENOLSULPHONIC ACID-UREA-FORMALDEHYDE AS TANNING AGENTS AND PROCESS FOR THEIR MANUFACTURE

The invention relates to reaction products of phenol-sulphonic acid-urea-formaldehyde as agents for tanning of skins or leather. They are manufactured from a hydroxyphenylsulphone-hydroxyphenyl-monosulphonic acid which is condensed with an alkoxybenzene, this condensation product being reacted at elevated temperature in an aqueous-acid medium with an urea formaldehyde mixture or with a methylolated urea.

**PAT NO :** 3927966  **APP DATE :** 6-11-74

**APP NO :** 521509  **INT CLASS :** C14C 5/00, C14C 3/04, C14C 3/06

**ASSIGNEE(S) :** SCHILL & SCHACHAR, BOSBUNGEN, GERMANY

**INVENTOR(S) :** ROLF LEBACLLINGER, HOLZGERLINGEN, HEINZ METACHKAL

**TITLE :** PROCESS OF PRODUCING A FATLIQUORING CHROME TANNING AGENT, COMPOSITION CONTAINING SAME AND METHOD OF USING SAME

The fatliquoring chrome-tanning agent of this invention is composed of a spray-dried powder of a mixture of chromium sulfate and a higher molecular alkyl sulfonate which may contain paraffinic hydrocarbons, cation-active emulsifiers and/or anion-active fatty alcohol polyglycol ether sulfates. The powder can be used for simultaneous chrome-tanning and fatliquoring or for simultaneous retanning and oiling.

**PAT NO :** 3966402  **APP DATE :** 5-7-74

**APP NO :** 486239  **INT CLASS :** C14C 3/06c, D01F 1/00

**ASSIGNEE(S) :** BASF AKTIENGESELLSCHAFT LUDWIGSHAFEN (RHINE) GERMANY

**INVENTOR(S) :** HANS JOACHIM NEBEL

**TITLE :** PROCESS FOR THE MANUFACTURE OF BASIC CHROME TANNING AGENTS SOLUBLE IN COLD WATER

Process for the manufacture of powdered chromium sulfate soluble in cold water, wherein aqueous chromium sulfate solutions are evaporated in the presence of at least one glycol.
A process for the preparation of a chrome-tanning agent and Glauber's salt from sodium bisulphate contaminated with chromium compounds obtained as byproduct from the manufacture of chromic acid from solid sodium dichromate and sulphuric acid, comprising (a) treating an about 20 to 70% aqueous sodium bisulphate solution which contains chromium compounds and is acid with sulphuric acid with sulphur dioxide until all the chromium is present in the form of chromium (III); (b) adding sodium hydroxide to the reduced solution until it has a pH between 4 and 5; (c) adding sodium carbonate to the solution with a pH between 8 and 8.5, thereby precipitating chromium (III) hydroxide; (d) separating off the precipitated chromium (III) hydroxide; and (e) evaporating the filtrate left after removal of the chromium (III) hydroxide to yield solid sodium sulphate.

Advantageously, the reduced solution obtained in (a) is divided into a major portion and a minor portion, the major portion being combined with the chromium (III) hydroxide separated off in (d) to produce a chromium sulphate/sodium sulphate solution which is evaporated to dryness. Desirably, the minor portion is such an amount relative to the chromium content of the starting material that the chromium sulphate/sodium sulphate solution has a basicity according to Schorlemmer of about 33%, and the molar amount of water in the solution after precipitation of the chromium (III) hydroxide is about 10 times that of the sodium sulphate, the solution thereafter being cooled to form solid Na₂SO₄·10H₂O.

Polycondensates of phenols and formaldehyde which contain sulphonic acid groups and salts thereof bonded to the phenol either directly or via a methylene bridge are prepared by reacting a neutralized reaction product of phenols and sulphonating agents, which contains a mixture of the starting phenol, phenolsulphonic acid and bis-(hydroxyphenyl) sulphones, with formaldehyde and a bisulphite at a pH value of 4-8.
The present invention relates to methods for preparing a titanium tanning agent from sulphuric-acid titanium-ferriferous solutions and use thereof for leather tanning. The method for preparing a titanium tanning agent from titanium-ferriferous sulphate solutions comprises introduction, into said solution, of an oxidizing agent comprising a sulphuric-acid solution of a peroxy-titanium complex, followed by the addition of ammonium sulphate and sulphuric acid to precipitate a double salt of titanyl and ammonium sulphate in the monohydrate form \((\text{NH}_4\text{TiO}_2\text{(SO}_4\text{)}_2\cdot\text{H}_2\text{O})\). The precipitation of this salt is preferably effected prior to its formation in an amount of 75-85% based on TiO₂. The resulting salt is separated and washed; the filtrate and washings are combined and treated with ammonium sulphate to afterprecipitate the salt which is separated and recycled into the starting solution. The thus-prepared salt is used for tanning hides pretreated with a tanning promotor; sodium salt of disulphodinaphthylmethane or phthalic anhydride, or aluminium alum, or a mixture of aluminium alum with urotropin; ammoniumtitanyl sulphate or phenol oligomers dispersed in lignosulphonic acids. Tanning of delimbed, or delimed and pickled, or delimed pickled and chromed hides is effected using the titanium tanning agent in the presence of lactic acid, aluminium alum or products of condensation of synthetic fatty acids with triethanolamine. The present invention is useful in the leather industry.

Mineral tanned leather is frequently retanned with synthetic tanning agents to improve the fullness and softness, but leather retanned by the prior art method is difficult to dye in full shades with anionic dyes. According to the invention, condensation products of aldehydes with certain aromatic sulfonic acids or carboxylic acids containing amino groups are employed for retanning, thereby improving the receptivity of the leather for anionic dyes. These acids have the general formula: \(X'ZRNXAY\text{CH}_2\text{nZNRXAY}'\). Where \(X\) and \(X'\) are independently \(H\), \(_\text{CH}_2\text{SO}_3\text{H}\) or \(_\text{CH}_2\text{OH}\), \(A\) is a benzene radical, \(Y\) and \(Z\) are independently \(H\), \(_\text{SO}_3\text{H}\) or \(_\text{CO}_2\text{H}\), \(R\) is \(H\) or \(\text{C}_1\text{-alkyl}\) and \(n\) is from 0 to 10, with the proviso that at least one sulfonic acid or carboxyl group is present in the molecule.
METHOD FOR PREPARING TITANIUM TANNING AGENT AND USE THEREOF IN LEATHER TANNING PROCESS

The present invention relates to methods for preparing a titanium tanning agent from sulphuric-acid titanium-ferriferous solutions and use thereof for leather tanning. The method for preparing a titanium tanning agent from titanium-ferriferous sulphate solutions comprises introduction, into said solution, of an oxidizing agent comprising a sulphuric-acid solution of a peroxy-titanium complex, followed by the addition of ammonium sulphate and sulphuric acid to precipitate a double salt of titanyl and ammonium sulphate in the monohydrate form (NH₄)₂TiO₂(SO₄)₂·H₂O. The precipitation of this salt is preferably effected prior to its formation in an amount of 75-85% based on TiO₂. The resulting salt is separated and washed; the filtrate and washings are combined and treated with ammonium sulphate to after precipitate the salt which is separated and recycled into the starting solution. The thus-prepared salt is used for tanning hides pretreated with a tanning promoter; sodium salt of disulphanaphthylmethane or phthalic anhydride, or aluminium alum, or a mixture or aluminium alum with urotropin; ammoniumtitanysulphate or phenol-aldehyde oligomers dispersed in lignosulphonic acids. Tanning of delimed, or delined and pickled, or delined pickled and chromed hides is effected using the titanium tanning agent in the presence of lactic acid, aluminium alum or products or condensation of synthetic fatty acids with triethanolamine. The present invention is useful in the leather industry.

PREPARATION OF WATER-SOLUBLE OR SELF-DISPERSING RESIN TANNING AGENTS

Water-soluble or self-dispersing resin tanning agents are prepared by heating from 5 to 30% by weight of melamine, from 15 to 45% by weight of urea, from 20 to 35% by weight (calculated as anhydrous material) of formaldehyde and from 15 to 55% by weight of sodium bisulphite or of a corresponding amount of some other salt of sulfuric acid for from two to twelve hours in aqueous solution at 40-120°C and a pH from 5 to 9.
A new tanning agent, isophorone dicarbamoylsulfonate, is provided for tanning cattle hides and sheepskins. A white leather which does not discolour with exposure to sunlight and which has good fill and tensile strength is produced. The tanning agent is also effective for retanning slack chrome-tanned and zirconium-tanned cattle hides and sheepskins.

PAT NO : 4504271  APP DATE : 12-3-85
APP NO : INT CLASS :
ASSIGNEE(S) :
INVENTOR(S) :
TITLE : LEATHER TANNING AGENT AND PROCESS FOR MAKING SAME

A leather tanning agent characterized in that it contains the following components, percent by weight: → sulphate of aluminium and ammonium? 3 to 20? → containing 0.001 to 1.0% of TiO₂ or? → TiO₂ and ZrO₂? → and/or sulphate of zirconium and ammonium? 20 to 50? → containing 0.001 to 0.5% of TiO₂? or → TiO₂ and Al₂O₃? → and sulphate of titanyl and ammonium? → containing of 0.001 to 1.0% of Al₂O₃? → and/or ZrO₂? the balance.? The above mentioned additives of TiO₂, ZrO₂ and Al₂O₃ incorporated in the sulphates are present therein in a chemically combined state. In the process for producing the leather tanning agent a titanium-containing solution with a concentration of titanium from 80 to 200 g/l as calculated for titanium dioxide is reacted with a solution for aluminium sulphate containing 80 to 130 g/l of aluminium as calculated for alumina, and/or a solution of zirconium sulphate containing 50 to 200 g/l of zirconium as calculated for zirconium dioxide in the presence of sulphuric acid and ammonium sulphate. The sulphate tanning agent according to the present invention can be very useful in the leather industry.

PAT NO : 4744794  APP DATE : 17-5-88
APP NO : INT CLASS :
ASSIGNEE(S) : HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN
INVENTOR(S) :
TITLE : LEATHER FATLIQUORING AGENTS COMBINABLE WITH TANNING AND RETANNING COMPOSITIONS

A leather fatliquoring agent and a process for its use in which the agent is a sulfosuccinic (C₁₂₋₂₄ fatty residue) ester and an anionic or nonionic emulsifier. The agent is stable in the presence of tanning liquor electrolytes.

PAT NO : 4828570  APP DATE : 9-5-89
APP NO : INT CLASS :
ASSIGNEE(S) : CASSELLA AKTIENGESELLSCHAFT
INVENTOR(S) :
TITLE : TANNING AGENT AND A PROCESS FOR ITS PREPARATION
Hides, skins and pelts are tanned by use of a tanning agent which comprises the reaction product of acetaldehyde, formaldehyde and a formylamino compound.

Aqueous compositions derived from (A) a reaction product of a phenol and e.g. oleum in a molar ratio (phenol): (SO₃) being (1) : (1.1-2.2), (B) a water soluble, lower alkylamine or lower alkanolamine, a lower alkylenediamine, a poly-dialkylenepolyamine having 3 to 5 N-atoms or a heterocyclic amine, (C) a water soluble chromium, aluminium, iron or heterocyclic amine, (C) a water soluble chromium, aluminium, iron or zirconium tanning salt or mixtures thereof and optionally, (D) an alkali metal salt of ethylenediaminetetraacetic acid or of a pyrophosphate are prepared by admixing an aqueous solution of component (A) and optionally (D) first with component (B) and subsequently with component (C) which may optionally be present in the form of an aqueous solution and are used as tanning agent for tanning pelts or retanning all types of leather.

Tanning agents containing a complex formed between chromium ions and an acrylate or methacrylate polymer and further including an organically bound thio group present in said polymer or in a mercapto compound added to the tanning agents, and methods for pickling, tanning, and retanning skins and hides with such tanning agents.

A leather tanning agent for use as a sole tannage or with another includes Al (III) ions, Ti (IV) ions and an organic masking agent in specific proportions. The ratio of Ti:Al expressed as metal oxides TiO₂:Al₂O₃ on a weight basis is from 0.6:1 to 2:1 and the amount of masking agent is
from 0.1 to 0.4 mole per mole of total metal oxides. Preferably SO₄ ions are present. Other metal tanning agents such as zirconium salts can be incorporated. The tanning agent finds wide use and has an increased stability.

PAT NO : 5011499 APP DATE : 30-4-91
APP NO : INT CLASS :
ASSIGNEE(S) : SCHILL & SEILACHER GMBH & CO
INVENTOR(S) :
TITLE : TANNING AGENT FORMULATION FOR MANUFACTURE OF SEMI-FINISHED LEATHER PRODUCTS

A tanning agent formulation obtained by reacting 1 mole of an aliphatic \( \infty, \infty' \)-dialdehyde having 2-8 carbon atoms in the form of an aqueous solution of about 3-60% strength with about 0.2-4 moles of a hydroxy compound of the formula \( \text{R}_1\_O\_[C_2H_4\,0\] x\_(C_3H_6\,0\] y\_(C_4H_8\,0\] z\text{n}_H \) whereby \( n \) is an integer from 0 to 10, \( x+y+z \) is an integer from 1 to 20, wherein the alkoxy groups may be arranged in any order, and \( \text{R}_1 \) is H, C₁-C₁₂ alkyl, or C₁-C₁₂ alkyl having one or more hydroxyl groups, wherein \( n \) is not 0 for \( \text{R}_1=\text{H} \) is disclosed. Pelts pretanned with the formulation have improved mold resistance and are free of tanning metal salts and formaldehyde.

PAT NO : 5207802 APP DATE : 4-5-93
APP NO : INT CLASS :
ASSIGNEE(S) : SANDOZ LTD
INVENTOR(S) :
TITLE : SULPHO GROUP-CONTAINING AROMATIC COMPOUNDS, THEIR PRODUCTION AND USE AS DISPERSANTS OR LEVELLING AGENTS IN DYEING TEXTILES OR TANNING LEATHER

Compounds and mixtures of compounds obtainable by condensation of sulphonation products of defined alkyl-substituted naphthalenes and sulphonation products of optionally alkyl-substituted diphenylethers with formaldehyde and optionally treated with further components, are valuable interface-active compounds suitable as assistant in various application fields, in particular as dispersing or levelling agents in the dyeing with disperse dyes or as tanning-assistants or dyeing-assistants for leather.

PAT NO : 5348430 APP DATE : 28-9-93
APP NO : INT CLASS :
ASSIGNEE(S) : SANDOZ LTD
INVENTOR(S) :
METALIZED AMMONIUM SALTS OF CONDENSATES OF SULPHO GROUP CONTAINING AROMATIC COMPOUNDS WITH DIHYDROXYDIPHENYL-SULPHONES

Ammonium salts of aromatic sulpho group-containing condensation products of at least one sulpho group-containing aromatic compound and at least one dihydroxydiphenylsulphone with formaldehyde or a formaldehyde-yielding compound or of defined starting mono- or oligosulphones which are partially metallized and compositions containing them, optionally together with UV-absorbers, are suitable as assistants in the treatment of various substrates and act in particular as improves of the light-fastness of synthetic polyamide fibres and their dyeings, as assistants in the dyeing or tanning of leather and in the production of paper and as wood-preserving agents.

FILTRATION PROCESS, USE OF STABILIZERS INSTALLATION FOR A FILTRATION PROCESS, AND PROCEDURE FOR OPERATING SAID INSTALLATION

A medium containing tanning agents and/or albumens, such as beer, wine or fruit juice, is simultaneously stabilized and filtrated by means of cross-flow filtration in the ultrafiltration or microfiltration range, in the presence of a stabilizer.

AQUEOUS SOLUTIONS OF SYNTHETIC TANNING AGENTS

Aqueous solutions of synthetic tanning agents comprising (A) a lithium salt of a synthetic, anionic aromatic tanning agent or the anionic non-condensed precursor thereof, and, as optional components, (B) a water-soluble chromium, aluminum, iron or zirconium salt or a mixture thereof, and (C) an alkali metal salt of ethylenediaminetetraacetic acid or of a pyrophosphate are prepared by mixing an aqueous solution of component (A) and optional component (C) with component (B), which may also be in the form of an aqueous solution, and are used as tanning agents for tanning hides or for retanning leather of all kinds. The lithium salts used as component (A) are novel and can be used as stain blockers for polyamide fibres or for enhancing the wetfastness properties of dyeing on polyamide fibres.
INVENTOR(S) :

TITLE : RETINOIC ACID AS A SKIN TANNING AGENT IN PERSONS OF LIGHT SKIN COLOR

Topical application of retinoic acid is effective for increasing the tyrosinase activity in the skin of people having light skin. Thus, topical application of retinoic acid may be used to effect a suntan in people having light skin and as a consequence protect against photodamage.

PAT NO : 5274078 APP DATE : 28-12-93
APP NO : INT CLASS :
ASSIGNEE(S) : SHOWA DENKO KABUSHIKI KAISHA
INVENTOR(S) :

PROCESS FOR PRODUCING COLLAGEN POWDER

A collagen powder is obtained by wet-pulverizing a purified animal tissue consisting mainly of collagen in water at a collagen concentration of 1-30% by weight at a water temperature of not more than 37°C and a pH value of 2-8, tanning treating the pulverized tissue at a pH level with a polyvalent metal tanning agent to obtain a stabilized wet collagen product, dehydrating the wet collagen product at a pH level of 4-8, and then drying and pulverizing the dehydrated product into a powder. This powder can be used as an additive for modifying paints, artificial leathers, molding materials and the like based on synthetic resins such as thermoplastic resins. The materials obtained with this powder have an excellent appearance, feel, and moisture-absorbing and moisture-releasing properties.

PAT NO : 5298647 APP DATE : 29-3-94
APP NO : INT CLASS :
ASSIGNEE(S) : INDIVIDUALLY OWNED PATENT
INVENTOR(S) :

AROMATIC COMPOUNDS OF AMIDE STRUCTURE DERIVED FROM AMINOBENZOIC ACIDS, HYDROXY-BENZOIC ACIDS, CINNAMIC ACIDS, UROCANIC ACIDS AND BENZIMIDAZOLES, ABSORBING UVB AND/OR UVA

Aromatic compounds absorbing UVB and/or UVA, substituted with an amide function, selected from the group consisting of ##STR1## whose variable substituents are as defined in the specification, e.g. ##STR2## are useful as photoprotective agents or tanning accelerators.

PAT NO : 5300121 APP DATE : 5-4-94
APP NO : INT CLASS :
ASSIGNEE(S) : COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION
INVENTOR(S) :
PROCESS FOR THE TREATMENT OF WOOL SKINS

A method of tanning an animal skin with wool or hair attached thereto wherein the animal skin is pickled in an acidic solution containing at least one tanning agent characterised in that the animal skin is pickled and tanned while a holding agent is present on the wool or hairs and is thereafter scoured so to remove the holding agent.

SUNGLASS LENSES HAVING UV BLOCKING CENTRAL ZONE

The present invention provides a sunglass lens having a central region which is provided with an ultra-violet screening agent to protect the eye while the surrounding regions of the lens have little or no screening agent so as to permit tanning of the skin around the eye. In a preferred embodiment, the lens is additionally colored with tint, the darkness of which may vary over the surface area of the lens. In addition, the variation of tint over the surface of the lens is different from the variation of the ultra-violet screening agent. For example, the ultra-violet screening agent is most highly concentrated in the central portion of the lens whereas the colored tint is most highly concentrated around the periphery of the lens.

CONDENSATION POLYMERS OF SULFONATED PHENOLS, UREA, OTHER ORGANIC NITROGEN-BASES, AND FORMALDEHYDE, AND THEIR USE AS TANNING AGENTS AND AS SPRAYING AIDS FOR REDISPERSIBLE POLYMER POWDERS

Condensation polymers of sulfonated phenols, urea, other organic nitrogen-bases and formaldehyde, obtainable by (A) sulfonation of phenols with 1.0 to 1.5 moles of sulfuric acid per mole of phenol and (B) condensation of these sulfonation products with (a) 0.5 to 1.8 moles of urea per mole of phenol, (b) 0.001 to 0.5 moles at least one other organic nitrogen-base per mole of phenol, and (c) 1.0 to 3.0 moles of formaldehyde per mole of phenol. The condensation polymers are suitable for use as tanning agents in the leather and skin-producing industry and as spraying aids for redispersible polymer powders.
A process for pickling and pretanning raw hides which comprises: (I) pickling a raw hide in an aqueous liquor A which is devoid of salts and contains (a) a reaction product of phenol and a sulfonating agent, the molar ratio of (phenol): (SO$_3$) being (1): (1.1-2.2), and (II) pretanning the pickled raw hide in the same bath by addition of an aqueous formulation B comprising (b) a reductive saccharide having a dextrose equivalent of 10 to 100, and (c) an aliphatic dialdehyde containing 2 to 8 carbon atoms. The combined one-bath pickling/pretanning process makes it possible to prepare, in treatment baths free from neutral salts and heavy metals, readily shaveable wet white leathers that are suitable for further processing by all conventional tanning methods.

A melanin that is soluble in an aqueous solution at a pH between 5 and 9 at a temperature of 0 to 100° C. Advantageously, the melanin is capable of being filtered through at least a 0.45 micron size filter, and has a molecular weight greater than 10,000 kilodaltons. The melanin is useful for providing a naturally-appearing tan to mammalian skin and hair. Such melanin can be produced by combining dopachrome and an appropriate enzyme, or by incubating 5,6-dihydroxyindole-2-carboxylic acid alone or with 5,6-dihydroxyindole, or with 3-amino-tyrosine. The melanin is also useful for providing a sunscreen to mammalian skin and hair, to treat post-inflammatory hypo-and hyperpigmentation, to tint glass and plastic, to protect industrial materials against ultraviolet damage, and as a coloring agent in foodstuffs such as coffee, tea, soda, whiskey and liquors.

Composition and method for enhancing therapeutic effects of topically applied agents are disclosed. The cosmetic or therapeutic composition may include one or more of cosmetic or pharmaceutical agents present in a total amount of 0.01 to 40% and one or more of hydroxycarboxylic acids or related compounds present in a total amount of 0.01 to 99% by weight of the total composition. The cosmetic and pharmaceutical agents may include but not limited to age spots, wrinkles and keratoses removing agents; vitamins; aloe; sun screens; tanning, depigmenting and shampooing agents; antiyeasts; antifungal, antibacterial and antiviral agents;
topical bronchial dilators and topical cardiovascular agents; harmonal agents; vasodilators; retinoids and other dermatological agents. The hydroxycarboxylic acids and related compounds include organic alpha and beta hydroxycarboxylic acids, alpha and beta ketocarboxylic acids and salts thereof. Topical application of the cosmetic or therapeutic composition has been found to achieve a substantial increase in cosmetic or therapeutic effect of the active ingredient in humans and domesticated animals.

**PAT NO** : 5409501  **APP DATE** : 25-4-95

**APP NO** :  **INT CLASS** :  

**ASSIGNEE(S)** : HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN (HENKEL KGAA)

**INVENTOR(S)** :  

**TITLE** : DILUTABLE ALUMINIUM TRIFORMATE TANNING AGENTS IN THE FORM OF HIGHLY CONCENTRATED, STORABLE AQUEOUS SOLUTIONS AND THEIR USE

Described is the use of at least substantially storage-stable supersaturated and acidified aqueous solutions of mixtures of aluminium triformate and alkali-metal and/or alkaline-earth formates as a means of supplying a water-dissolved mineral tanning agent based on aluminium formate for the tanning of leather and/or hides using little or no chromium. The invention thus concerns, in particular, storage-stabilized supersaturated and acidified aqueous solutions of this kind which also contain small quantities of stabilizers, preferred stabilizers being 1,2,3,4-butanetetracarboxylic acid and/or xanthane gum. The invention also concerns the use of such stabilized supersaturated aqueous forms of aluminium triformate solutions for use as tanning auxiliaries with a fixing and/or tanning action in the tanning or finishing of leather and hides.

**PAT NO** : 5425784  **APP DATE** : 20-6-95

**APP NO** :  **INT CLASS** :  

**ASSIGNEE(S)** : BASF AKTIENGESELLSCHAFT

**INVENTOR(S)** :  

**TITLE** : POLYMERIC TANNING AGENTS

Water-soluble graft polymers of monosaccharides, oligosaccharides, polysaccharides and derivatives thereof, obtainable by free radical polymerization of A) a monomer selected from, or a monomer mixture of (a) from 20 to 100% by weight of acrylic acid or methacrylic acid or of a mixture thereof or of the alkali metal, alkaline earth metal or ammonium salts thereof, (b) from 0 to 80% by weight of other monoethylenically unsaturated monomers which are copolymerizable with the monomers (a) and (c) from 0 to 5% by weight of monomers having at least 2 ethylenically unsaturated, nonconjugated double bonds in the molecule, in the presence of B) monosaccharides, oligosaccharides, polysaccharides, oxidatively, hydrolytically or enzymatically degraded polysaccharides, oxidized hydrolytically degraded or oxidized enzymatically degraded polysaccharides or a mixture of the stated compounds in a weight ratio A:B of
from 95:5 to 20:80, are used as a tanning agent for the self-tanning, pretanning and simultaneous tanning of pelts and skins and for the retanning of leather and skin.

PAT NO : 5427594  APP DATE : 27-6-95
APP NO : INT CLASS :
ASSIGNEE(S) : CIBA-GEIGY CORPORATION
INVENTOR(S) :
TITLE : PROCESS FOR PICKLING RAW HIDES
A process for pickling raw hides, which comprises treating a delimed raw hide with an aqueous liquor that comprises a reaction product of phenol and a sulfonating agent, the molar ratio of (phenol): (SO:sub.3) being (1): (1.1-2.2), and which is free from neutral salts. The raw hides obtainable by the novel process are suitable for further processing by all conventional tanning methods.

PAT NO : RE34986  APP DATE : 4-7-95
APP NO : INT CLASS :
ASSIGNEE(S) : SCHILL & SEILACHER GMBH & CO
INVENTOR(S) :
TITLE : TANNING AGENT FORMULATION FOR MANUFACTURE OF SEMIFINISHED LEATHER PRODUCTS
A tanning agent formulation obtained by reacting 1 mole of an aliphatic _omega.,omega._ dialdehyde having 2-8 carbon atoms in the form of an aqueous solution of about 3-60% strength with about 0.2-4 moles of a hydroxy compound of the formula whereby n is an integer from 0 to 10, x+y+z is an integer from 1 to 20, wherein the alkoxy groups may be arranged in any order, and R.sub. 1 is H, C.sub. 1 -C.sub. 12 alkyl, or C.sub. 1 C.sub. 12 alkyl having one or more hydroxyl groups, wherein n is not 0 for R.sub. 1 .dbd. H is disclosed. Pelts pretanned with the formulation have improved mold resistance and are free of tanning metal salts and formaldehyde.