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(54) **EXTRAIT ET PREPARATION COSMETIQUE**  
(54) **EXTRACT AND COSMETIC PREPARATION**

(57) Des extraits s'obtenant par extraction de feuilles, de pétioles et/ou de rameaux de plantes des genres Cassia ou Lawsonia avec un solvant organique présentant à 20 °C une constante diélectrique à 2,5 ou moins sont pratiquement incolores et procurent une action curative et revitalisante intense sur la peau et les cheveux. Des préparations avec ces extraits renferment de préférence encore un tensioactif et/ou un corps gras.

(57) The invention relates to extracts obtainable through extraction of leaves, leafstalks and/or branches of plants belonging to the genus Cassia or Lawsonia using an organic solvent. Said solvent has a dielectric constant of 2.5 or less at 20 °C. The extracts are practically colorless and exhibit a high cleaning and conditioning effect on skin and hair. Preparations with these extracts preferably contain an additional tenside and/or one fatty substance.



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<p>(21) Internationales Aktenzeichen: PCT/EP98/05775 (22) Internationales Anmeldedatum: 10. September 1998 (10.09.98) (30) Prioritätsdaten: 197 41 397.8 19. September 1997 (19.09.97) DE (71) Anmelder (für alle Bestimmungsstaaten ausser US): HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN [DE/DE]; Henkelstrasse 67, D-40589 Düsseldorf (DE). (72) Erfinder; und (75) Erfinder/Anmelder (nur für US): HÖFFKES, Horst [DE/DE]; Carlo-Schmid-Strasse 113, D-40595 Düsseldorf (DE). BERGMANN, Bettina [DE/DE]; Am Rahmer Bach 137, D-47269 Duisburg (DE). MÖLLER, Hinrich [DE/DE]; Haydnstrasse 27, D-40789 Monheim (DE). KLEEN, Astrid [DE/DE]; Vennhauser Allee 203, D-40627 Düsseldorf (DE).</p>	<p>(81) Bestimmungsstaaten: AU, BR, CA, CN, CZ, HU, JP, KR, MX, NZ, PL, RU, SI, SK, TR, US, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Veröffentlicht</b> <i>Mit internationalem Recherchenbericht. Vor Ablauf der für Änderungen der Ansprüche zugelassenen Frist; Veröffentlichung wird wiederholt falls Änderungen eintreffen.</i></p>	
<p>(54) Title: EXTRACT AND COSMETIC PREPARATION (54) Bezeichnung: EXTRAKT UND KOSMETISCHE ZUBEREITUNG (57) Abstract The invention relates to extracts obtainable through extraction of leaves, leafstalks and/or branches of plants belonging to the genus Cassia or Lawsonia using an organic solvent. Said solvent has a dielectric constant of 2.5 or less at 20 °C. The extracts are practically colorless and exhibit a high cleaning and conditioning effect on skin and hair. Preparations with these extracts preferably contain an additional tenside and/or one fatty substance. (57) Zusammenfassung Extrakte, erhältlich durch Extraktion von Blättern, Blattstielen und/oder Zweigen von Pflanzen der Gattungen Cassia oder Lawsonia mit einem organischen Lösungsmittel, das bei 20 °C eine Dielektrizitätskonstante von 2,5 oder kleiner aufweist, sind praktisch farblos und entfalten eine hohe Pflege- und Konditionierwirkung auf Haut und Haaren. Zubereitungen mit diesen Extrakten enthalten bevorzugt noch ein Tensid und/oder einen Fettstoff.</p>		

**Title****Extract and Cosmetic Preparation****Field of the Invention**

This invention relates to special henna extracts, to their use as cosmetic agents and to corresponding preparations for the treatment of skin and hair.

**Background of the Invention**

5           Nowadays, human hair is treated in various ways with hair-care preparations. These include, for example, the cleaning of hair with shampoos, the care and regeneration of hair with rinses and conditioners and the bleaching, coloring and shaping of hair with wave preparations, tinting preparations and styling preparations. Whereas, in the past, these  
10 product properties above all have been central to the formulation of such preparations, increasing efforts are now being made also to achieve a conditioning and hair-care effect and even the regeneration of damaged hair or protection against damage with these preparations.

          Although various hair-care and conditioning agents are known to the  
15 expert, there is still a need for new active principles. Particular interest attaches in this regard to new active principles from natural, more particularly vegetable, sources which enjoy particularly high acceptance among consumers.

          Since ancient times, henna has been used for coloring purposes  
20 and, in particular, for coloring human hair. In this connection, it was found very early on that, by applying henna preparations (generally as an aqueous suspension in the form of a coloring paste), not only is the hair colored, it is also given an improved feel and greater shine.

          In view of the intensive coloring action of known henna preparations,  
25 this hair-care effect remained confined for a long time to the coloring of hair. Very recently, however, numerous proposals have been put forward with a view to overcoming this limitation. In particular, attempts have been made to produce colorless extracts which nevertheless have the same hair-

care effect as the corresponding henna plant. Reference is made in this connection, for example, to the article by D. Kenney in **Cosmetics & Toiletries, Vol. 96 (June 1980), pages 44-51.**

5 However, known henna extracts have not been able even remotely to satisfy requirements. These aqueous or aqueous/alcoholic extracts still have a pronounced coloration. This can lead on the one hand to unwanted staining of the hair, but in particular makes the color-finishing of the end product containing these extracts very difficult and, in the case of colorless transparent products, virtually impossible. However, a major disadvantage  
10 of these extracts is that their conditioning and hair-care effect is very much weaker than that of the henna plant itself.

### **Summary of the Invention**

It has now surprisingly been found that colorless or only pale yellowish colored extracts, which have a significantly better care and  
15 conditioning effect on the hair and skin than known henna extracts for the same concentration, can be obtained by extracting special parts of certain types of henna plants with selected solvents.

In a first embodiment, therefore, the present invention relates to extracts obtainable by extracting leaves, leaf stems and/or branches of  
20 plants of the genus *Cassia* or *Lawsonia* with an organic solvent which has a dielectric constant of 2.5 or lower at 20°C.

### **Detailed Description of the Invention**

*Lawsonia inermis* and *Cassia auriculata* have proved to be particularly suitable plants for the preparation of the extracts. Extracts of  
25 *Lawsonia inermis* are distinguished by a particularly strong effect.

Although both leaves and leaf stems and branches of the plants mentioned have proved to be suitable starting materials, the extracts are nevertheless preferably prepared from the ground leaves of these plants.

In order to obtain the extracts according to the invention, the  
30 solvents used for the extraction process should only have a low polarity.

Any solvents with a dielectric constant of 2.5 or lower at 20°C are suitable. Information on the dielectric constants of solvents is available to the expert in the known relevant reference books, for example "**CRC Handbook of Chemistry and Physics**".

5           According to the invention, solvents which have a solubility in water of less than 1% by weight at 20°C are preferably used.

          Most particularly preferred solvents for the purposes of the present invention are cyclohexane, tetrachloromethane, benzene, n-hexane and n-pentane. Extracts prepared using cyclohexane as solvent have proved to  
10 be most particularly effective.

          The extraction process is normally carried out under normal pressure. In one particular embodiment of the invention, however, the extract may also be prepared using solvents in the supercritical state. In this case, it can be of advantage to use n-pentane as solvent.

15           In one preferred embodiment of the invention, the extract is free from coloring components. In the context of the present invention, an extract is "free from coloring components" if it satisfies the following requirements:

- no coloration of the extract itself visible with the naked eye or only a  
20 very slight yellowish coloration
- no staining of the skin or hair visible with the naked eye during application of the extract
- no interaction with other dyes present in the product which produces a change in color visible with the naked eye.

25           The active substance/solvent mixture obtained during extraction in accordance with the invention is highly concentrated by removing most of the solvent, for example by evaporation, so that the extract obtained preferably contains less than 5% by weight of original solvent, based on the extract as a whole. Extracts which do not contain any detectable quantities  
30 of original solvent are particularly preferred.

The present invention also relates to the use of the extracts described above as a cosmetic agent.

Finally, the present invention relates to preparations for the treatment of human skin or human hair which contain one of the extracts  
5 described above.

In principle, there are no limitations to the nature of the hair treatment preparation. For example, it may be a cleaning preparation, such as a shampoo, a hair-care preparation, such as a hair conditioner or hair rinse, a setting preparation, such as a hair lotion, hair spray or hair gel, a  
10 permanent shaping preparation, such as permanent wave and fixing preparations, color-changing preparations, such as blonding preparations, oxidation colorants and tints based on substantive dyes, hair lotions and hair tip fluids. Accordingly, the preparations may be formulated as solutions, emulsions, gels, creams, aerosols or lotions.

15 In the context of the teaching of the invention, hair-care preparations on the one hand and hair colorants on the other hand are preferred hair treatment preparations.

The preparations according to the invention contain an extract according to claim 1 as a compulsory component. So far as the preferred  
20 embodiments in respect of this component are concerned, reference is made to the foregoing observations.

In a first embodiment, the preparations according to the invention consist solely of this henna extract or contain only preservatives and/or perfume oils in quantities of less than 1% by weight, based on the  
25 preparation as a whole, as further components.

In a second embodiment, the preparations according to the invention contain this extract in quantities of 0.05 to 99% by weight and more particularly in quantities of 0.1 to 10% by weight, based on the one hand on the active substance content of the extract and, on the other hand, on the  
30 preparation as a whole.

In another preferred embodiment, the hair treatment preparations according to the invention contain at least one surfactant. Both anionic and nonionic, cationic, zwitterionic and ampholytic surfactants may be used. It may be preferred to use at least one anionic surfactant on the one hand and at least one cationic or nonionic surfactant on the other hand.

Examples of surfactants suitable for use in accordance with the invention are:

- anionic surfactants such as, in particular, soaps of fatty acids, alkyl sulfates, alkyl polyglycol ether sulfates and ether carboxylic acids containing 10 to 18 carbon atoms in the alkyl group and up to 12 glycol ether groups in the molecule and sulfosuccinic acid monoalkyl and dialkyl esters containing 8 to 18 carbon atoms in the alkyl group and sulfosuccinic acid monoalkyl polyoxyethyl esters containing 8 to 18 carbon atoms in the alkyl group and 1 to 6 oxyethyl groups,
- nonionic surfactants such as, in particular, products of the addition of 2 to 30 moles ethylene oxide and/or 0 to 5 moles propylene oxide onto linear fatty alcohols containing 8 to 22 carbon atoms, onto fatty acids containing 12 to 22 carbon atoms and onto alkylphenols containing 8 to 15 carbon atoms in the alkyl group, C<sub>12-22</sub> fatty acid monoesters and diesters of addition products of 1 to 30 moles ethylene oxide with glycerol, C<sub>8-22</sub> alkyl mono- and oligoglycosides and ethoxylated analogs thereof and addition products of 5 to 60 moles ethylene oxide with castor oil and hydrogenated castor oil,
- zwitterionic surfactants, more particularly the so-called betaines, such as N-alkyl-N,N-dimethyl ammonium glycinate, for example cocoalkyl dimethyl ammonium glycinate, N-acylaminopropyl-N,N-dimethyl ammonium glycinate, for example cocoacylaminopropyl dimethyl ammonium glycinate, and 2-alkyl-3-carboxymethyl-3-hydroxyethyl imidazolines containing 8 to 18 carbon atoms in the alkyl or acyl group and cocoacylaminoethyl hydroxyethyl carboxymethyl glycinate,

- ampholytic surfactants, such as N-alkyl glycines, N-alkyl propionic acids, N-alkylaminobutyric acids, N-alkyliminodipropionic acids, N-hydroxyethyl-N-alkylamidopropyl glycines, N-alkyl taurines, N-alkyl sarcosines, 2-alkylaminopropionic acids and alkylaminoacetic acids containing about 8 to 18 carbon atoms in the alkyl group,
- cationic surfactants of the quaternary ammonium compound type, for example ammonium halides, more particularly chlorides and bromides, such as alkyl trimethyl ammonium chlorides, dialkyl dimethyl ammonium chlorides and trialkyl methyl ammonium chlorides, for example cetyl trimethyl ammonium chloride, stearyl trimethyl ammonium chloride, distearyl dimethyl ammonium chloride, lauryl dimethyl ammonium chloride, lauryl dimethyl benzyl ammonium chloride and tricetyl methyl ammonium chloride, behenyl trimethyl ammonium methosulfate and the imidazolium compounds known by the INCI names of Quaternium-27 and Quaternium-83. Other suitable cationic surfactants are alkylamidoamines, such as the stearamidopropyl dimethyl amine commercially available as Tegoamid<sup>®</sup> S18, and so-called esterquats, such as the N,N-bis-(2-palmitoyloxyethyl) dimethyl ammonium chloride commercially obtainable as Armocare<sup>®</sup> VGH-70.

Depending on the type of preparation and the type of surfactant, the surfactants may be present in the preparations according to the invention in total quantities of 0.5 to 25% by weight, based on the preparation as a whole. Preparations formulated as so-called concentrates may have even higher surfactant contents.

In another preferred embodiment, the preparations according to the invention also contain a fatty compound.

Preferred fatty compounds are linear and branched, saturated and unsaturated fatty alcohols or natural fatty alcohol mixtures containing 8 to 22 carbon atoms in the alkyl chain such as, for example, decanol, octanol, octenol, dodecenol, decenol, octadienol, dodecadienol, decadienol, oleyl



alcohol, erucyl alcohol, ricinoyl alcohol, stearyl alcohol, isostearyl alcohol, palmityl alcohol, lauryl alcohol, myristyl alcohol, arachidyl alcohol, caprylic alcohol, capric alcohol, linoleyl alcohol, linolenyl alcohol and behenyl alcohol, and the Guerbet alcohols and fatty alcohol cuts which are obtained  
5 by reduction of naturally occurring triglycerides, such as bovine tallow, palm oil, peanut oil, rapeseed oil, cottonseed oil, soybean oil, sunflower oil and linseed oil or fatty acid esters formed from esterification products thereof with corresponding alcohols and which therefore represent a mixture of different fatty alcohols. The fatty alcohols are normally used in quantities of  
10 0.01 to 15% by weight, preferably in quantities of 0.1 to 10% by weight and more preferably in quantities of 0.3 to 6% by weight, based on the preparation as a whole. For special preparations, however, the quantity of fatty compound used may even be as high as 90% by weight.

Monoesters of fatty acids with alcohols containing 6 to 24 carbon  
15 atoms and triglycerides of natural origin may also be used as fatty compounds.

In another preferred embodiment, the hair treatment preparations according to the invention may also contain a conditioning principle selected from the group consisting of cationic surfactants, cationic  
20 polymers, alkylamidoamines, paraffin oils, vegetable oils and synthetic oils.

Preferred conditioning principles include cationic polymers. Cationic polymers are generally polymers which contain a quaternary nitrogen atom, for example in the form of an ammonium group. Preferred cationic polymers are, for example,

- 25 - quaternized cellulose derivatives commercially available under the names of Celquat<sup>®</sup> and Polymer JR<sup>®</sup>. The compounds Celquat<sup>®</sup> H 100, Celquat<sup>®</sup> L 200 and Polymer JR<sup>®</sup> 400 are preferred quaternized cellulose derivatives.
- polymeric dimethyl diallyl ammonium salts and copolymers thereof with  
30 esters and amides of acrylic acid and methacrylic acid. The products

commercially obtainable as Merquat<sup>®</sup> 100 (poly(dimethyl diallyl ammonium chloride)) and Merquat<sup>®</sup> 550 (dimethyl diallyl ammonium chloride/acrylamide copolymer) are examples of such cationic polymers.

- copolymers of vinyl pyrrolidone with quaternized derivatives of dialkyl-aminoacrylate and methacrylate such as, for example, vinyl pyrrolidone/  
5 dimethylaminomethacrylate copolymers quaternized with diethyl sulfate. Such compounds are commercially obtainable under the names of Gafquat<sup>®</sup> 734 and Gafquat<sup>®</sup> 755.
- vinyl pyrrolidone/methoimidazolium chloride copolymers commercially  
10 obtainable under the name of Luviquat<sup>®</sup>.
- quaternized polyvinyl alcohol

and the polymers containing quaternary nitrogen atoms in the polymer main chain known by the names of

- polyquaternium 2,
- 15 - polyquaternium 17
- polyquaternium 18 and
- polyquaternium 27.

Cationic polymers belonging to the first four of these groups are particularly preferred.

- 20 Other suitable conditioning principles are silicone oils, more particularly dialkyl and alkylaryl siloxanes such as, for example, dimethyl polysiloxane and methylphenyl polysiloxane and alkoxyated and quaternized analogs thereof. Examples of such silicone oils are the products marketed by Dow Corning under the names of DC 190, DC 200,  
25 DC 344, DC 345 and DC 1401 and the commercial products Q2-7224 (manufacturer: Dow Corning; a stabilized trimethyl silyl amodimethicone), Dow Corning<sup>®</sup> 929 Emulsion (containing a hydroxylamino-modified silicone which is also known as amodimethicone), SM-2059 (manufacturer: General Electric), SLM-55067 (manufacturer: Wacker) and Abil<sup>®</sup> Quat 3270 and  
30 3272 (manufacturer: Th. Goldschmidt: diquaternary polydimethyl siloxanes,

quaternium-80).

Paraffin oils and vegetable oils, such as jojoba oil, sunflower oil, orange oil, almond oil, wheat germ oil and peach kernel oil may also be used as conditioning agents.

5 Other suitable hair-conditioning compounds are phospholipids, for example soya lecithin, egg lecithin and kephalins.

Preparations according to the invention in the form of hair colorants or tints may contain at least one oxidation dye precursor of the primary intermediate type, optionally in combination with oxidation dye precursors  
10 of the secondary intermediate type, and/or a substantive dye.

According to the invention, preferred primary intermediates are p-phenylenediamine, p-toluylenediamine, p-aminophenol, 1-(2'-hydroxyethyl)-2,5-diaminobenzene, N,N-bis-(2-hydroxyethyl)-p-phenylenediamine, 2-(2,5-diaminophenoxy)-ethanol, 1-phenyl-3-carboxyamido-4-amino-5-pyrazolone,  
15 4-amino-3-methylphenol, 2-methylamino-4-aminophenol, 2,4,5,6-tetraaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2-dimethylamino-4,5,6-triaminopyrimidine, 2-hydroxyethylaminomethyl-4-aminophenol and 4,4'-diaminodiphenylamine.

20 According to the invention, preferred secondary intermediates are 1-naphthol, pyrogallol, 1,5-, 2,7- and 1,7-dihydroxynaphthalene, o-aminophenol, 5-amino-2-methylphenol, m-aminophenol, resorcinol, resorcinol monomethyl ether, m-phenylenediamine, 1-phenyl-3-methyl-5-pyrazolone, 2,4-dichloro-3-aminophenol, 1,3-bis-(2,4-diaminophenoxy)-  
25 propane, 4-chlororesorcinol, 2-chloro-6-methyl-3-aminophenol, 2-methyl resorcinol, 5-methyl resorcinol, 2,5-dimethyl resorcinol, 2,6-dihydroxypyridine, 2,6-diaminopyridine, 2-amino-3-hydroxypyridine, 2,6-dihydroxy-3,4-diaminopyridine, 3-amino-2-methylamino-6-methoxypyridine, 4-amino-2-hydroxytoluene, 2,6-bis-(2-hydroxyethylamino)-toluene, 2,4-diamino-  
30 phenoxyethanol, 2-amino-4-hydroxyethylaminoanisole

Substantive dyes are typically nitrophenylenediamines, nitroaminophenols, anthraquinones or indophenols. Preferred substantive dyes are the compounds known under the International names or commercial names of HC Yellow 2, HC Yellow 4, HC Yellow 6, Basic Yellow 57, Disperse Orange 3, HC Red 3, HC Red BN, Basic Red 76, HC Blue 2, Disperse Blue 3, Basic Blue 99, HC Violet 1, Disperse Violet 1, Disperse Violet 4, Disperse Black 9, Basic Brown 16 and Basic Brown 17 and also 4-amino-2-nitrodiphenylamine-2'-carboxylic acid, 6-nitro-1,2,3,4-tetrahydroquinoxaline, hydroxyethyl-2-nitrotoluidine, picramic acid, 2-amino-6-chloro-4-nitrophenol and 4-N-ethyl-1,4-bis-(2'-hydroxyethylamino)-2-nitrobenzene hydrochloride. The preparations according to the invention in this embodiment contain the substantive dyes in a quantity of, preferably, 0.01 to 20% by weight, based on the colorant as a whole.

In addition, the preparations according to the invention may also contain naturally occurring dyes such as, for example, henna red, henna neutral, henna black, camomile blossom, sandalwood, black tea, black alder bark, sage, logwood, madder root, catechu, sedre and alkanet.

The oxidation dye precursors or the substantive dyes present do not have to be single compounds. Instead, the hair colorants according to the invention - due to the processes used for producing the individual dyes - may contain small quantities of other components providing they do not adversely affect the coloring result or have to be ruled out for other reasons, for example toxicological reasons.

With regard to the dyes suitable for use in the hair coloring and tinting formulations according to the invention, reference is also specifically made to Ch. Zviak's work **The Science of Hair-care**, Chapter 7 (pages 248-250; Substantive Dyes) and Chapter 8, pages 264-267; Oxidation Dye Precursors), published as Vol. 7 of the Series **Dermatology** (Editors: Ch. Culnan and H. Maibach), Marcel Dekker Inc., New York/Basel, 1986 and to the **Europäische Inventar der Kosmetik-Rohstoffe** published

by the Europäische Gemeinschaft and available in diskette form from the Bundesverband Deutscher Industrie- und Handelsunternehmen für Arzneimittel, Reformwaren und Körperpflegemittel e.V., Mannheim, Germany.

5           In principle, the pH value of the preparations according to the invention may be between 2 and 11, the expert being aware of the preferred pH ranges for the various preparations. The pH value of the preparations according to the invention where they are hair-care preparations is preferably between 2 and 7, pH values of 3 to 5 being particularly  
10 preferred. Virtually any acid suitable for cosmetic purposes may be used to adjust the pH value. Edible acids are normally used. Edible acids are acids which are absorbed in the course of normal food consumption and which have positive effects on the human organism. Edible acids are, for example, acetic acid, lactic acid, tartaric acid, citric acid, malic acid,  
15 ascorbic acid and gluconic acid. Citric acid and lactic acid are used in particularly preferred embodiments of the invention. Hair colorants are preferably formulated with pH values of about 7 to 11.

Other typical ingredients of the preparations according to the invention include:

20 - anionic, zwitterionic, amphoteric and nonionic polymers such as, for example, vinyl acetate/crotonic acid copolymers, polydimethyl siloxanes, vinyl pyrrolidone/vinyl acrylate copolymers, vinyl acetate/butyl maleate/isobornyl acrylate copolymers, methyl vinyl ether/maleic anhydride copolymers and esters thereof, uncrosslinked and polyol-  
25 crosslinked polyacrylic acids, acrylamidopropyl trimethyl ammonium chloride/acrylate copolymers, octyl acrylamide/methyl methacrylate/tert.butylaminoethyl methacrylate/2-hydroxypropyl methacrylate copolymers, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, vinyl pyrrolidone/dimethyl aminoethyl methacrylate/vinyl caprolactam  
30 terpolymers and optionally derivatized cellulose ethers.

- symmetrical and non-symmetrical, linear and branched dialkyl ethers containing in all between 12 and 36 carbon atoms and more particularly 12 to 14 carbon atoms, for example di-n-octyl ether, di-n-decyl ether, di-n-nonyl ether, di-n-undecyl ether and di-n-dodecyl ether, n-hexyl-n-octyl ethers, n-octyl-n-decyl ether, n-decyl-n-undecyl ether, n-undecyl-n-dodecyl ether and n-hexyl-n-undecyl ether and also di-tert.butyl ether, diisopentyl ether, di-3-ethyldecyl ether, tert.butyl-n-octyl ether, isopentyl-n-octyl ether and 2-methylpentyl-n-octyl ether,
- quaternized amines, such as methyl-1-alkylamidoethyl-2-alkyl imidazolinium methosulfate,
- defoamers, such as silicones,
- thickeners, such as agar agar, guar gum, alginates, xanthan gum, gelatin, pectin, hydroxyethyl cellulose and also polyacrylamides and copolymers thereof,
- structurants, such as maleic acid, mono-, di- and oligosaccharides,
- perfume oils, dimethyl isosorbide and cyclodextrins,
- solubilizers, such as ethanol, isopropanol, ethylene glycol, propylene glycol, glycerol and diethylene glycol,
- dyes for coloring the preparation,
- antidandruff agents, such as piroctone olamine, zinc omadine and climbazol,
- other substances for adjusting the pH,
- animal and vegetable protein hydrolyzates, more especially elastin, collagen, keratin, milk protein, soya protein, almond protein and wheat protein hydrolyzates and fatty acid condensates and quaternized derivatives thereof,
- vitamins and vitamin precursors, such as panthenol, derivatives thereof and biotin,
- plant and honey extracts such as, in particular, extracts of oak bark, stinging nettle, hamamelis, hops, camomile, burdock root, horse willow,

- lime blossom, almond, aloe vera, coconut, mango, apricot, lemon, wheat, kiwi, melon, orange, grapefruit, sage, rosemary, birch, lady's-smock, creeping thyme, bloodwort, restharrow, meristem, ginseng and ginger root,
- 5 - other active principles, such as ceramides, allantoin, pyrrolidone carboxylic acids and bisabolol,
  - UV filters,
  - consistency factors, such as sugar esters, polyol esters or polyol alkyl ethers,
  - 10 - fats and waxes, such as spermaceti, beeswax, montan wax and paraffins,
  - fatty acid alkanolamides,
  - swelling and penetration agents, such as glycerol, propylene glycol monoethyl ether, carbonates, hydrogen carbonates, guanidines, ureas
  - 15 and primary, secondary and tertiary phosphates,
  - opacifiers, such as latex, styrene/PVP and styrene/acrylamide copolymers,
  - pearlizers, such as ethylene glycol monostearate and distearate and PEG-3-distearate,
  - 20 - complexing agents, such as EDTA, NTA,  $\beta$ -alanine diacetic acid and phosphonic acids,
  - reducing agents such as, for example, thioglycolic acid and derivatives thereof, thiolactic acid, cysteamine, thiomalic acid and  $\alpha$ -mercaptoethane sulfonic acid,
  - 25 - oxidizing agents, such as hydrogen peroxide, potassium bromate and sodium bromate,
  - propellants, such as propane/butane mixtures,  $N_2O$ , dimethyl ether,  $CO_2$ ,  $N_2$  and air and
  - antioxidants.
  - 30 Information on other ingredients and quantity ranges for the

individual ingredients can be found in the reference books known to the expert, for example K. Schrader, **Grundlagen und Rezepturen der Kosmetika, 2nd Edition, Hüthig Buch Verlag, Heidelberg, 1989.**

## 5 Examples

In the Examples all quantities are in parts by weight, unless otherwise indicated.

### 1. Preparation of the extracts

10 1.1 200 g of dried powdered henna leaves from coloring henna (Lawsonia inermis) leaves of Indian origin were extracted for 24 hours in 4 liters of cyclohexane in a Soxhlet. The solution obtained was filtered and concentrated in a water jet vacuum in a Rotavapor until it was free from solvent. The extract was present in the form of a pale yellowish oil. The  
15 yield was 7.3%, based on the dry vegetable material used.

1.2 200 g of dried powdered leaf and bark parts from henna neutral (Cassia auriculata) leaf and bark parts were extracted for 24 hours in 4 liters of cyclohexane in a Soxhlet. The solution obtained was filtered and  
20 concentrated in a water jet vacuum in a Rotavapor until it was free from solvent. The extract was present in the form of a colorless oil. The yield was 6.5%, based on the dry plant material used.

### 2. Methods for determining wet combability

#### 25 2.1 Controlled damage of the hair tresses

Dry hair tresses weighing ca. 2 g (Fischbach und Miller, type 6923) were blonded once for 30 minutes with 32 g of blonding agent (commercial product Poly Blond Medium Aufheller). After the blonding mixture had been washed out, the hair tresses were subjected directly, i.e. without  
30 drying, to permanent waving with the market product Poly Lock Normal.



The contact times of the wave component and the fixing component were 30 and 15 minutes, respectively. After the fixing component had been rinsed out, the tresses were dried and conditioned for at least 2 days under ambient conditions.

5

## 2.2 Determination of combability

Before the determination, the rinsed hair tresses were intensively shampooed with 0.2 ml of a 50% aqueous solution of Texapon<sup>®</sup> N25 (28% solution of sodium lauryl ether sulfate in water) and then rinsed out. 1 g of the preparation to be tested was then uniformly massaged into the hair. Rinse-off products were left on the hair for 1 minute and then carefully rinsed out. After massaging (in the case of leave-on products) and rinsing out (in the case of rinse-off products), the hair was combed with a fine-toothed hard rubber comb and the combing resistance was subjectively evaluated. Comparison preparations were then tested in the same way on the same tress. Evaluation was based on a scoring system of 1 (= very good) to 5 (= very poor).

10

15

## 3. Application Examples

### 20 3.1 Hair-care lotion/hair shine lotion (leave-on)

	B1a	B1b
Henna extract of Example 1.1	0.5	-
Henna extract of Example 1.2	-	0.5
25 Water	50.0	50.0
Ethanol	49.5	49.5
Wet combability	1	3

30 After drying, the hair was soft, shiny and easy to comb in both cases. It also showed reduced electrostatic charging in relation to its

original state, i.e. before application of the preparation.

### 3.2 Anionic rinse

	B2a	B2b	B2c	C2
5 Tallow fatty alcohol	8	8	8	8
Texapon <sup>®</sup> N28 <sup>1</sup>	15	15	15	15
Henna extract of Example 1.1	1	-	-	-
Henna extract of Example 1.2	-	1	3	-
Water	76	76	74	77
10 Wet combability score	3	4	1	4-5

<sup>1</sup> Lauryl ether sulfate sodium salt (ca. 28% active substance; INCI name: Sodium Laureth Sulfate) (HENKEL)

15 The scores for rinse B2c thus correspond to those normally awarded to preparations containing quaternary ammonium compounds.

### 3.3 Rinse based on natural raw materials

	B3	C3
20 Phospholipon <sup>®</sup> 25 P <sup>2</sup>	2	2
Henna extract of Example 1.1	2	-
Guar gum	1	1
Water	97	95
25 Wet combability score	1	2

<sup>2</sup> Soya lecithin, deoiled (Rhone-Poulenc)

### 3.4 Hair tint

	B4	C4
30 Texapon <sup>®</sup> N 28	10.0	10.0

	C <sub>12-18</sub> fatty alcohol mixture	3.5	3.5
	Henna extract of Example 1.1	2.0	-
	HC Blue No. 2	0.05	0.05
	Violet 1,4 D	0.05	0.06
5	HC Yellow 2	0.06	0.06
	6-Nitro-1,2,3,4-tetrahydroquinoxaline	0.02	0.02
	Arianor Siennabraun	0.05	0.05
	2-Amino-2-methyl-1-propanol	←to pH 8.0→	
	Water	← to 100 →	
10			
	Color on light blond hair tresses	←honey-blond→	
	Wet combability score	3	4-5

### 3.5 Cream shampoo/shower bath

15		B5a	B5b	C5a	C5b
	Coconut alcohol	3.0	3.0	4.0	5.0
	Texapon <sup>®</sup> N 28	30.0	25.0	25.0	30.0
	Henna extract of Example 1.1	2.0	1.0	-	-
20	Sodium stearate	3.0	-	-	3.0
	Water	62.0	71.0	71.0	62.0
	Wet combability score		3	4-5	

25 Formulation B5a left a distinctly more noticeable care effect behind than formulation C5b after showering.

### 3.6 Skin-care lotion

	Lanette <sup>®</sup> N <sup>3</sup>	8.0
	Cetiol <sup>®</sup> OE <sup>4</sup>	2.0
30	Henna extract of Example 1.1	2.0

18

Eutanol®G <sup>5</sup>	4.0
Preservative	q.s.
Water	to 100

5           The lotion spreads easily on the skin and gives it a pleasant soft feel.

<sup>3</sup>   Cetyl stearyl alcohol/fatty alcohol sulfate mixture 90:10 (INCI name: Cetearyl Alcohol, Sodium Cetearth Sulfate) (HENKEL)

10   <sup>4</sup>   Dioctyl ether (INCI name: Dicaprylether) (HENKEL)

<sup>5</sup>   2-Octyl dodecanol (INCI name: Octyldodecanol) (HENKEL)

15           The invention may be varied in any number of ways as would be apparent to a person skilled in the art and all obvious equivalents and the like are meant to fall within the scope of this description and claims. The description is meant to serve as a guide to interpret the claims and not to limit them unnecessarily.

**Article 34 Amendment**

- 1 An extract obtainable by extracting leaves, leaf stems and/or  
branches of plants selected from Lawsonia inermis and Cassia auriculata  
5 with an organic solvent which has a dielectric constant of 2.5 or lower at  
20°C.
2. An extract as claimed in claim 1, characterized in that the plant is  
Lawsonia inermis.
3. An extract as claimed in claim 1 or 2, characterized in that the  
10 extract was obtained by extracting ground leaves.
4. An extract as claimed in any of claims 1 to 3, characterized in that  
the organic solvent has a solubility in water of less than 1% by weight at  
20°C.
5. An extract as claimed in any of claims 1 to 4, characterized in that  
15 the organic solvent is selected from cyclohexane, tetrachloromethane,  
benzene, n-hexane and n-pentane.
6. An extract as claimed in any of claims 1 to 5, characterized in that  
the solvent is cyclohexane.
7. An extract as claimed in any of claims 1 to 5, characterized in that  
20 the solvent is n-pentane.
8. An extract as claimed in any of claims 1 to 7, characterized in that  
the extract is free from coloring components.
9. The use of the extract claimed in any of claims 1 to 8 as a cosmetic  
agent.
- 25 10. A preparation for treating human skin or human hair, characterized  
in that it contains the extract claimed in any of claims 1 to 8.
11. A preparation as claimed in claim 10, characterized in that it is a hair  
treatment preparation, more particularly a hair-care preparation or a hair  
colorant.
- 30 12. A preparation as claimed in claim 10, characterized in that it is a

skin-care preparation.

13. A preparation as claimed in any of claims 10 to 12, characterized in that it additionally contains a surfactant.

14. A preparation as claimed in any of claims 10 to 13, characterized in  
5 that it additionally contains a dye.