Office de la Propriété
Intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An agency of
Industry Canada

(21) **2 789 593**

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) **A1**

(22) Date de dépôt/Filing Date: 2012/09/11

(41) Mise à la disp. pub./Open to Public Insp.: 2013/03/12

(30) Priorité/Priority: 2011/09/12 (EP111 808 63.0)

(51) Cl.Int./Int.Cl. *A61K 8/18* (2006.01), *A45D 19/00* (2006.01), *A61K 8/04* (2006.01), *A61Q 5/10* (2006.01)

(71) Demandeur/Applicant:
THE PROCTER & GAMBLE COMPANY, US

(72) Inventeurs/Inventors:
KLINGELMEYER, ANNETTE ELSBETH, DE;
KRAUSE, THOMAS, DE;
MAHLA, UWE, DE;
MEINERT, KNUT, DE;
MORAND, MATTHIAS, DE;
SCHMITT, MANFRED, DE;
TREMEL, MAIK, DE; ...

(54) Titre : METHODE DE COLORATION DES CHEVEUX
(54) Title: METHOD FOR COLOURING HAIR

(57) Abrégé/Abstract:

A method for colouring hair, wherein the method comprises: (i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently (ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions; wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

(72) **Inventeurs(suite)/Inventors(continued)**: DIEZ MCCREADY, ELIZABETH ANA, DE

(74) **Agent**: MBM INTELLECTUAL PROPERTY LAW LLP

ABSTRACT

A method for colouring hair, wherein the method comprises: (i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently (ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions; wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

METHOD FOR COLOURING HAIR

FIELD OF THE INVENTION

A method for colouring hair, wherein the method comprises: (i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently (ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions; wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

BACKGROUND OF THE INVENTION

Hair colouring or dyeing involves the application of a hair dye onto hair which results in the colouration of hair fibres. Typically the hair colour is changed or 'freshened up'. In highlighting, a limited number of sections of the head of hair – typically a plurality of hair fibres from their route to tip – are dyed to a lighter hair colour, wherein the sections are spaced out at intervals such that undyed sections remain inbetween. Lowlighting is a similar procedure wherein a darker colour dye is utilised instead. Highlighted or lowlighted hair . The hair can also be highlighted with other colours e.g. red and/or purple tones. The entire head of hair can be dyed using this method e.g. with 3 different hair colouring agents for a more striking look. The end result is normally increased appearance of texture and vibrancy of the hair. The dyeing can also be tailored to the final hairstyle in order to highlight certain aspects or draw attention away from other features. Subtle highlighting/lowlighting can give the impression of a slight lightening/darkening of the hair shade and results in a fresher look.

Highlighting (and lowlighting) typically employs the use of barrier means, such as foils, in order to prevent bundles of hair fibres intentionally treated with a hair colouring agent from contacting other hair fibres and thus transfer of the hair colouring agent onto hair fibres that were not intended to be coloured at all or intended to be coloured with a different dye. Coloured fibres when contacted with other hair fibres can transfer their dye onto these other fibres, which are then also dyed – this is sometimes known as 'staining'. Therefore, barrier means are used to wrap up each intentionally dyed bundle of hair fibres and thus separate it from the other hair fibres.

The wrapped bundles are then typically left to develop for a period of time before the hair dye is rinsed out and the final cut and style carried out.

There is a need, however, for the consumer to feel more beautiful during the hair dyeing process – some consumers believe that it detracts from this when they have to spend a period of time in the hairdressing salon with their head covered in e.g. foil parcels. Moreover, there is a need for speeding up the process of dyeing hair. Furthermore, there is a need for providing the stylist with greater artistic and creative freedom, vis-à-vis the relationship of the hair colour and the final hairstyle, during the application of the dye and during the dye development time. There is also a need for reducing the use of solid barrier means e.g. foils, such as for environmental reasons e.g. reduction of waste. Furthermore, there is a need to provide the consumer with a means to highlight/lowlight their hair by themselves i.e. at home without the need for a stylist.

In summary, there is a constant need for providing methods resulting in improved efficiency, flexibility and freedom for the stylist. There is a need for the consumer to have an improved feeling of well being and beautification during the entire process of hair colouring and not just after treatment, and for the process to be quicker. There is a need for the stylists to be able to envision, create and experiment with the final look at every stage throughout the colouring process.

SUMMARY OF THE INVENTION

According to the first aspect, the invention relates to a method for colouring hair, wherein the method comprises:

(i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently

(ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions;

wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

According to a second aspect, the present invention relates to a composition for colouring hair comprising hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the composition has a storage modulus of at least about 3000 Pa, at least about 3300 Pa, or at least about 3500 Pa, or at least about 4000 Pa, or at least about 4500 Pa, or at least about 5000 Pa, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C.

According to a third aspect, the present invention relates to the use of the composition according to the second aspect, for colouring and/or styling hair.

According to a fourth aspect, the present invention relates to a kit comprising:

(a) application instructions;
(b) a composition.

According to a fifth aspect, the present invention relates to a process for creating a composition for colouring hair comprising mixing:

- a hair colouring agent,
- a hydrophobic phase,
- a hydrophilic phase,
- a surfactant,
- and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 3 [refers to the tables in the example section below]) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 3) is shown. This photo is analysed quantitatively in Figure 25, line Q.

Figure 2: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 1, but after 30 min. This photo is analysed quantitatively in Figure 26, line Q.

Figure 3: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 5) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 5) is shown. This photo is analysed quantitatively in Figure 25, line S.

Figure 4: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 3, but after 30 min. This photo is analysed quantitatively in Figure 26, line S.

Figure 5: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 3) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 3) is shown. This photo is analysed quantitatively in Figure 23, line Q.

Figure 6: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 5, but after 30 min. This photo is analysed quantitatively in Figure 24, line Q.

Figure 7: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 3) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 3) is shown. This photo is analysed quantitatively in Figure 21, line Q.

Figure 8: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 7, but after 30 min. This photo is analysed quantitatively in Figure 22, line Q.

Figure 9: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing

formulation III, and 1 part thickening formulation 2) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 2) is shown. This photo is analysed quantitatively in Figure 23, line R.

Figure 10: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 9, but after 30 min. This photo is analysed quantitatively in Figure 24, line R.

Figure 11: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 2) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 2) is shown. This photo is analysed quantitatively in Figure 21, line R.

Figure 12: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 11, but after 30 min. This photo is analysed quantitatively in Figure 22, line R.

Figure 13: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 5) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 5) is shown. This photo is analysed quantitatively in Figure 23, line S.

Figure 14: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 13, but after 30 min. This photo is analysed quantitatively in Figure 24, line S.

Figure 15: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between a first composition (left) according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 5) and a second composition (right) according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts

developing formulation V, and 1 part thickening formulation 5) is shown. This photo is analysed quantitatively in Figure 21, line S.

Figure 16: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 15, but after 30 min. This photo is analysed quantitatively in Figure 22, line S.

Figure 17: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between colour formulation H (left) and a water (right) is shown. This photo is analysed quantitatively in Figure 28, line T.

Figure 18: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 17, but after 30 min. This photo is analysed quantitatively in Figure 28, line U.

Figure 19: Shows a qualitative colour migration experiment. The photograph displayed is after 1 min. A amount of migration between colour formulation H (left) and colour formulation I (right) is shown. This photo is analysed quantitatively in Figure 27, line T.

Figure 20: Shows a qualitative colour migration experiment. The photograph displayed is the same as in Figure 19, but after 30 min. This photo is analysed quantitatively in Figure 27, line U.

Figure 21: Shows a colour migration graph. X is pixel position. Y is grey value. The photograph displayed is after 1 min.

Line Q is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 3 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 3).

Line R is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 2 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 2).

Line S is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 5 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 5).

Figure 22: Is the same as Figure 21, but after 30 min.

Figure 23: Shows a colour migration graph. X is pixel position. Y is grey value. The photograph displayed is after 1 min.

Line Q is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 3 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 3).

Line R is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 2 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 2).

Line S is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation A, 10 parts developing formulation III, and 1 part thickening formulation 5 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 5).

Figure 24: Is the same as Figure 23, but after 30 min.

Figure 25: Shows a colour migration graph. X is pixel position. Y is grey value. The photograph displayed is after 1 min.

Line Q is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 3 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 3).

Line S is a comparison between a first composition according to the present invention (comprising a mixture of 10 parts colour formulation C, 10 parts developing formulation V, and 1 part thickening formulation 5 [refers to the tables in the example section]) and a second composition according to the present invention (comprising a mixture of 10 parts colour formulation F, 10 parts developing formulation III, and 1 part thickening formulation 5).

Figure 26: Is the same as Figure 25, but after 30 min.

Figure 27: Shows a colour migration graph. X is pixel position. Y is grey value. Line T is a comparison of colour formulation H with colour formulation I, after 1 min. Line U is is the same as line T, but after 30 mins.

Figure 28: Shows a colour migration graph. X is pixel position. Y is grey value. Line T is a comparison of colour formulation H with clear water, after 1 min. Line U is is the same as line T, but after 30 mins.

Figure 29: Shows a rheology graph. X1 = angular frequency [rad/s]. Y1 = storage modulus; G' [Pa]. Compositions F, G and H were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition F is not pursuant to the present invention.

Figure 30: Shows a rheology graph. X1 = angular frequency [rad/s]. Y1 = storage modulus; G' [Pa]. Compositions A, B and C were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition A is not pursuant to the present invention.

Figure 31: Shows a rheology graph. X1 = angular frequency [rad/s]. Y1 = storage modulus; G' [Pa]. Compositions F, I and J were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition F is not pursuant to the present invention.

Figure 32: Shows a rheology graph. X1 = angular frequency [rad/s]. Y1 = storage modulus; G' [Pa]. Compositions A, D and E were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition A is not pursuant to the present invention.

Figure 33: Shows a rheology graph. X1 = angular frequency [rad/s]. Y2 = loss factor; tan δ. Compositions F, I and J were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition F is not pursuant to the present invention.

Figure 34: Shows a rheology graph. X1 = angular frequency [rad/s]. Y2 = loss factor; tan δ. Compositions A, D and E were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition A is not pursuant to the present invention.

Figure 35: Shows a rheology graph. X1 = angular frequency [rad/s]. Y2 = loss factor; tan δ. Compositions F, G and H were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition F is not pursuant to the present invention.

Figure 36: Shows a rheology graph. X1 = angular frequency [rad/s]. Y2 = loss factor; tan δ. Compositions A, B and C were tested – see "Experiment 1 – Compositions tested" in the Data section below. Composition A is not pursuant to the present invention.

Figure 37: Shows a turban hairstyle created by the method pursuant to the present invention.

Figure 38: Shows a hairstyle created by the method pursuant to the present invention.

Figure 39: Shows a hairstyle created by the method pursuant to the present invention.

Figure 40: Shows a hairstyle created by the method pursuant to the present invention.

Figure 41: Shows a turban hairstyle created by the method pursuant to the present invention.

Figure 42: Shows a criss-cross hairstyle created by the method pursuant to the present invention.

Figure 43: Shows a sculpting hairstyle created by the method pursuant to the present invention.

Figure 44: Shows a sculpting hairstyle created by the method pursuant to the present invention.

Figure 45: Shows a criss-cross hairstyle created by the method pursuant to the present invention.

Figure 46: Shows a 2-step hairstyle created by the method pursuant to the present invention.

Figure 47: Shows a blending hairstyle created by the method pursuant to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In all embodiments of the present invention, all percentages are by weight of the total composition, unless specifically stated otherwise. All ratios are weight ratios, unless specifically stated otherwise. References to 'parts' e.g. a mixture of 1 part X and 3 parts Y, is by weight unless stated otherwise. QSP means add a sufficient quantity for 100%. All ranges are inclusive and combinable. The number of significant digits conveys neither a limitation on the indicated amounts nor on the accuracy of the measurements.

All numerical amounts are understood to be modified by the word “about” unless otherwise specifically indicated. Unless otherwise indicated, all measurements are understood to be made at 23°C and at ambient conditions, where “ambient conditions” means conditions under about one atmosphere of pressure and at about 50% relative humidity. All such weights as they pertain to listed ingredients are based on the active level and do not include carriers or by-products that may be included in commercially available materials, unless otherwise specified. Herein, "comprising" means that other steps and other ingredients which do not affect the end result can be added. This term encompasses the terms "consisting of" and "consisting essentially of". The compositions, methods, uses, kits, and processes of the present invention can comprise, consist of, and consist essentially of the elements and limitations of the invention described herein, as well as any of the additional or optional ingredients, components, steps, or limitations described herein.

The term “substantially free from” or “substantially free of” as used herein means less than about 1%, preferably less than about 0.8%, more preferably less than about 0.5%, still more preferably less than about 0.3%, most preferably about 0%, by total weight of the composition or formulation.

“Hair”, as used herein, means mammalian hair including scalp hair, facial hair and body hair, more preferably hair on the human head and scalp. “Hair shaft” or “hair fibre” means an individual hair strand and may be used interchangeably with the term “hair.”

“Proximal to the scalp,” as used herein, means that portion of an extended, or substantially straightened, hair shaft that is closer in distance to the scalp than to the end of the hair. Thus, about 50% of the hair would be considered proximal to the scalp, and about 50% of the hair would be distal to the scalp. “z cm proximal to the scalp” means a distance “z” along the hair, with one endpoint being on or directly adjacent to the scalp, and the second endpoint being measured “z” centimetres along the length of the extended or substantially straightened hair.

“Cosmetically acceptable,” as used herein, means that the compositions, formulations or components described are suitable for use in contact with human keratinous tissue without undue toxicity, incompatibility, instability, allergic response, and the like. All compositions and formulations described herein which have the purpose of being directly applied to keratinous tissue are limited to those being cosmetically acceptable.

“Derivatives,” as used herein, includes but is not limited to, amide, ether, ester, amino, carboxyl, acetyl, acid and/or alcohol derivatives of a given compound.

“Monomer,” as used herein, means a discrete, non-polymerised chemical moiety capable of undergoing polymerisation in the presence of an initiator or any suitable reaction that creates a macromolecule e.g. such as polycondensation, polyaddition, anionic or cationic polymerization. “Unit”, as used herein, means a monomer that has already been polymerised i.e. is part of the polymer.

"Polymer," as used herein, means a chemical formed from the polymerisation of two or more monomers. The term "polymer" as used herein shall include all materials made by the polymerisation of monomers as well as natural polymers. Polymers made from only one type of monomer are called homopolymers. A polymer comprises at least two monomers. Polymers made from two or more different types of monomers are called copolymers. The distribution of the different monomers can be random, alternating or block-wise. The distribution of the different monomers can be calculated statistically or block-wise – all possibilities are suitable for the present invention. Except if stated otherwise, the term "polymer" used herein includes any type of polymer including homopolymers and copolymers.

"Associative thickeners" or "associative thickening polymers" are polymers that are based on water-soluble polymers. These can be acrylate polymers, cellulose ethers or, for the top-quality nonionic products, polyethyleneglycol. These are capped with water-insoluble hydrophobic groups like fatty alcohols, for example. In water solution or in emulsion, these polymers form a network that increases the viscosity of the water solution or emulsion. The water-soluble backbone polymer is dissolved in water. The hydrophobic caps are adsorbed onto the hydrophobic emulsion polymer particles, or they form micelle structures with hydrophobes from other polymers. As each associative thickener polymer contains at least two hydrophobic caps, the result is a three-dimensional network within the emulsion. This increases the viscosity. Mainly the high- and mid-shear viscosity is affected. Therefore, it improves antispatter and brush drag more than all other thickeners.

The term "molecular weight" or "M.Wt." as used herein refers to the number average molecular weight unless otherwise stated. All percentages are calculated by weight unless otherwise stated.

"Separately packaged," as used herein, means any form of packaging that prevents one composition or formulation from coming into physical contact, or admixing, with a second composition or formulation. "Separately packaged" may mean that the individual compositions/formulations are packaged in separate containers, or alternatively in a single container partitioned such that the compositions/formulations are not in physical contact.

"Kit," as used herein, means a packaging unit comprising a plurality of components. An example of a kit is, for example, a first composition and a separately packaged second composition. Another kit may comprise a first composition and an energy delivery device. A different kit may comprise three different types of separately packaged composition and a hair styling implement. A further kit may comprise application instructions comprising a method and a composition/formulation.

"Implement," as used herein, means a device used to facilitate application of a composition to the hair and/or manipulation of the hair. Examples of implements include, but are not limited to, a comb, a means for directed delivery (e.g., an applicator or tube), a covering for the hair (e.g., plastic bag, shower cap, etc.), and combinations thereof.

The inventors have answered the aforementioned needs by carefully selecting the specific combination of mutually compatible features such that the interaction therewith results in a method which provides the following benefits. Firstly, the method allows the stylist to design the colouring to the final hairstyle by creating the hairstyle during the application of the hair colouring agent. This ability is due to the sculptability and hold afforded by the composition(s) as described herein. The stylist therefore has greater artistic freedom to envisage the final hairstyle and the hair colouring effects fitting optimally thereto. In addition, hold provided by the composition provides the stylist with security and self-confidence because the section of hair coloured can be put in a specific orientation or placed in a specific location and it remains in this orientation/location. The stylist is thus able to achieve a wide variety of complex hairstyles, which may or may not be related to the hairstyle result when the hair is dry and the salon vist is over. The method saves waste because the use of solid barrier means e.g. aluminium foils, is not necessary, since the hold/sculptability provided by the composition creates sufficient separation. The lack of foils also means that the stylist can better see where he or she is applying the colouring agent and where this is in relation to the entire head of hair. The method according to the present invention is also faster to execute than with foils. The method also provides an aesthetic improvement of the application process – a variety of hair styles can be created during the application of the hair colouring agent. Furthermore, the method is easier for apprentice/trainee stylists to learn – highlighting with foils requires excellent technique and significant practice – whereas the method according to the present invention is much faster to learn. Moreover, the method provides way for consumers to create simple high- or low-lights at home since use of foils at home can be impractical and difficult to apply with one pair of hands.

The first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. Without being bound by theory, it is believed that when the selected thickener is mixed with a hydrophobic phase in the context of this composition, the thickener interacts with the rheological structure of the hydrophobic phase resulting in altered visco-elastic properties of the resulting composition, in other words stiffer and more elastic composition. In particular, it is thought that the thickener interacts with a lamellar structure of the compositon or micelles in the composition. These micelles or the lamellar structure exist due to the presence of both a of hydrophobic phase and hydrophilic phase in the composition. The stiffer and more elastic properties of the composition mean that the mobility of the composition is reduced – it is less able to flow and slide over itself, which provides hold and sculptability to hair fibres coated with the composition.

The method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions. Without being bound by theory, it is believed that the altered stiffness and elastic properties reduces the miscibility of the hair colouring agent and may also result in slower diffusion of the hair colouring agent. This means that a solid barrier means can be avoided since minimal staining occurs. “Staining” as used herein, means the unintentional dyeing of hair, typically due to unintended contact of the hair with a hair colouring agent. Staining may result from the transfer/migration of a colouring agent from one plurality of hair fibres to another plurality of hair fibres.

According to the first aspect, the present invention relates to a method for colouring hair, wherein the method comprises: (i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently (ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions; wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions. The features of the method according to the first aspect, as well as the other aspects and other relevant components, are described in detail hereinafter.

The method relates to a first composition comprising a first hair colouring agent a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. In an embodiment, the method comprises a second composition, wherein the second composition comprises a second hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

The first composition and/or the second composition comprises a hair colouring agent. The hair colouring agent may be selected from the group consisting of: direct dyes, oxidative dye compounds, and mixtures thereof. In an embodiment, the first and/or second composition is obtained by mixing together a colour formulation, a thickening formulation, and a developing formulation. In an embodiment, the first and/or second composition is obtained by mixing together a colour formulation, and a developing formulation.

The first composition and/or the second composition may comprise a direct dye. In an embodiment, the first and/or second composition comprise a colour formulation. The direct dye may be present in an amount of from about 0.001% to about 4%, or from about 0.005% to about 3%, or from about 0.01% to about 2%, by total weight of the colour formulation. The direct dye may be selected from the group consisting of: nitro dyes to provide a blue colour, nitro dyes to provide a red colour, nitro dyes to provide a yellow colour, quinone dyes, basic dyes, neutral azo dyes, acid dyes, and mixtures thereof.

In an embodiment, the direct dye is a nitro dye to provide a blue colour. In an embodiment, the nitro dye to provide a blue colour is selected from the group consisting of: 1,4-Bis[(2-hydroxyethyl)amino]-2-nitrobenzene, 1-(2-Hydroxyethyl)amino-2-nitro-4-[di(2-hydroxyethyl)amino]-benzene, (HC Blue No. 2), 1-Amino-3-methyl-4-[(2-hydroxyethyl)amino]-6-nitrobenzene, (HC Violet No. 1), 4-[Ethyl-(2-hydroxyethyl)amino]-1-[(2-hydroxyethyl)amino]-2-nitrobenzene-hydrochloride (HC Blue No. 12), 4-[Di(2-hydroxyethyl)amino]-1-[(2-methoxyethyl)amino]-2-nitrobenzene (HC Blue No. 11), 1-[(2,3-Dihydroxypropyl)amino]-4-[methyl-(2-hydroxyethyl)amino]-2-nitrobenzene (HC Blue No. 10), 1-[(2,3-Dihydroxypropyl)amino]-4-[ethyl-(2-hydroxyethyl)amino]-2-nitrobenzene-hydrochloride (HC Blue No. 9), 1-(3-Hydroxypropylamino)-4-[di(2-hydroxyethyl)amino]-2-nitrobenzene (HC Violet No. 2), 1-Methylamino-4-[methyl-(2,3-dihydroxypropyl)amino]-2-nitrobenzene (HC Blue No. 6), 2-((4-Amino-2-nitrophenyl)amino)-5-dimethylaminobenzoic acid (HC Blue No. 13), 1-(2-Aminoethylamino)-4-[di(2-hydroxyethyl)amino]-2-nitrobenzene, 4-(Di(2-hydroxyethyl)amino)-2-nitro-1-phenylamino-benzene, and mixtures thereof.

In an embodiment, the direct dye is a nitro dye to provide a red colour. In an embodiment, the nitro dye to provide a red colour is selected from the group consisting of: 1-Amino-4-[(2-hydroxyethyl)amino]-2-nitrobenzene (HC Red No. 7), 2-Amino-4,6-dinitro-phenol, 1,4-Diamino-2-nitrobenzene (CI76070), 4-Amino-2-nitro-diphenylamine (HC Red No. 1), 1-Amino-4-[di(2-hydroxyethyl)amino]-2-nitrobenzene-hydrochloride (HC Red No. 13), 1-Amino-5-chloro-4-[(2-hydroxyethyl)amino]-2-nitrobenzene, 4-Amino-1-[(2-hydroxyethyl)amino]-2-

nitrobenzene (HC Red No. 3), 4-((2-Hydroxyethyl)methylamino)-1-(methylamino)-2-nitrobenzene, 1-Amino-4-((2,3-dihydroxypropyl)amino)-5-methyl-2-nitrobenzene, 1-Amino-4-(methylamino)-2-nitrobenzene, 4-Amino-2-nitro-1-((prop-2-en-1-yl)amino)-benzene, 4-Amino-3-nitrophenol, 4-[(2-Hydroxyethyl)amino]-3-nitrophenol, 4-[(2-Nitrophenyl)amino]phenol (HC Orange No. 1), 1-[(2-Aminoethyl)amino]-4-(2-hydroxyethoxy)-2-nitrobenzene (HC Orange No. 2), 4-(2,3-Dihydroxypropoxy)-1-[(2-hydroxyethyl)amino]-2-nitrobenzene (HC Orange No. 3), 1-Amino-5-chloro-4-[(2,3-dihydroxypropyl)amino]-2-nitrobenzene (HC Red No. 10), 5-Chloro-1,4-[di(2,3-dihydroxypropyl)amino] -2-nitrobenzene (HC Red No. 11), 2-[(2-Hydroxyethyl)amino]-4,6-dinitrophenol, 4-Ethylamino-3-nitrobenzoic acid, 2-[(4-Amino-2-nitrophenyl)amino]-benzoic acid, 2-Chloro-6-ethylamino-4-nitrophenol, 2-Amino-6-chloro-4-nitrophenol, 4-[(3-Hydroxypropyl)amino]-3-nitrophenol, 2,5-Diamino-6-nitropyridine, 6-Amino-3-((2-hydroxyethyl)amino)-2-nitropyridine, 3-Amino-6-((2-hydroxyethyl)amino)-2-nitropyridine, 3-Amino-6-(ethylamino)-2-nitropyridine, 3-((2-Hydroxyethyl)amino)-6-(methylamino)-2-nitropyridin, 3-Amino-6-(methylamino)-2-nitropyridine, 6-(Ethylamino)-3-((2-hydroxyethyl)amino)-2-nitropyridine, 1,2,3,4-Tetrahydro-6-nitroquinoxaline, 7-Amino-3,4-dihydro-6-nitro-2H-1,4-benzoxazine (HC Red No. 14), and mixtures thereof.

In an embodiment, the direct dye is a nitro dye to provide a yellow colour. In an embodiment, the nitro dye to provide a yellow colour is selected from the group consisting of: 1,2-Diamino-4-nitrobenzene (CI76020), 1-Amino-2-[(2-hydroxyethyl)amino]-5-nitrobenzene (HC Yellow No. 5), 1-(2-Hydroxyethoxy)-2-[(2-hydroxyethyl)amino]-5-nitrobenzene (HC Yellow No. 4), 1-[(2-Hydroxyethyl)amino]-2-nitrobenzene (HC Yellow No. 2), 2-(Di(2-hydroxyethyl)amino)-5-nitrophenol, 2-[(2-Hydroxyethyl)amino]-1-methoxy-5-nitrobenzene, 2-Amino-3-nitrophenol, 1-Amino-2-methyl-6-nitrobenzene, 1-(2-Hydroxyethoxy)-3-methylamino-4-nitrobenzene, 2,3-(Dihydroxypropoxy)-3-methylamino-4-nitrobenzene, 2-[(2-Hydroxyethyl)amino]-5-nitrophenol (HC Yellow No. 11), 3-[(2-Aminoethyl)amino]-1-methoxy-4-nitrobenzene-hydrochloride, (HC Yellow No.9), 1-[(2-Ureidoethyl)amino]-4-nitrobenzene, 4-[(2,3-Dihydroxypropyl)amino]-3-nitro-1-trifluoromethyl-benzene (HC Yellow No. 6), 1-Chloro-2,4-bis[(2-hydroxyethyl)amino]-5-nitrobenzene (HC Yellow No. 10), 1-Amino-4-((2-aminoethyl)amino)-5-methyl-2-nitrobenzene, 4-[(2-Hydroxyethyl)amino]-3-nitro-1-methylbenzene, 1-Chloro-4-[(2-hydroxyethyl)amino]-3-nitrobenzene (HC Yellow No. 12), 4-[(2-Hydroxyethyl)amino]-3-nitro-1-trifluoromethylbenzene (HC Yellow No. 13), 4-[(2-Hydroxyethyl)amino]-3-nitro-benzonitrile (HC Yellow No. 14), 4-[(2-Hydroxyethyl)amino]-3-

nitro-benzamide (HC Yellow No. 15), 3-((2-Hydroxyethyl)amino)-4-methyl-1-nitrobenzene, 4-Chloro-3-((2-hydroxyethyl)amino)-1-nitrobenzene, 2,4-Dinitro-1-hydroxy-naphthaline.

In an embodiment, the direct dye is a quinone dye. In an embodiment, the quinone dye is selected from the group consisting of: 1,4-Di[(2,3-dihydroxypropyl)amino]-9,10-anthraquinone, 1,4-Di[(2-hydroxyethyl)amino]-9,10-anthraquinone (CI61545, Disperse Blue No. 23), Disperse Blue No. 377, 1-[(2-Hydroxyethyl)amino]-4-methylamino-9,10-anthraquinone (CI61505, Disperse Blue No. 3), 2-[(2-Aminoethyl)amino]-9,10-anthraquinone (HC Orange No. 5), 1-Amino-4-hydroxy-9,10-anthraquinone (CI60710, Disperse Red 15), 1-Hydroxy-4-[(4-methyl-2-sulfophenyl)amino]-9,10-anthraquinone, 7-Beta-D-glucopyranosyl-9,10-dihydro-1-methyl-9,10-dioxo-3,5,6,8-tetrahydroxy-2-anthracencarboxylic acid (CI75470, Natural Red No. 4), 1-[(3-Aminopropyl)amino]-4-methylamino-9,10-anthraquinone (HC Blue No. 8), 1-[(3-Aminopropyl)amino]-9,10-anthraquinone (HC Red No. 8), 1,4-Diamino-2-methoxy-9,10-anthraquinone (CI62015, Disperse Red No. 11, Solvent Violet No. 26), 1,4-Dihydroxy-5,8-bis[(2-hydroxyethyl)amino]-9,10-anthraquinone (CI62500, Disperse Blue No. 7, Solvent Blue No. 69), 1,4-Diamino-9,10-anthraquinone (CI61100, Disperse Violet No. 1), 1-Amino-4-(methylamino)-9,10-anthraquinone (CI61105, Disperse Violet No. 4, Solvent Violet No. 12), 2-Hydroxy-3-methoxy-1,4-naphthoquinone, 2,5-Dihydroxy-1,4-naphthoquinone, 2-Hydroxy-3-methyl-1,4-naphthoquinone, N-(6-((3-Chloro-4-(methylamino)phenyl)imino)-4-methyl-3-oxo-1,4-cyclohexadien-1-yl)urea (HC Red No. 9), 2-((4-(Di(2-hydroxyethyl)amino)phenyl)amino)-5-((2-hydroxyethyl)amino)-2,5-cyclohexadien-1,4-dione (HC Green No. 1), 5-Hydroxy-1,4-naphthoquinone (CI75500, Natural Brown No. 7), 2-Hydroxy-1,4-naphthoquinone (CI75480, Natural Orange No. 6), 1,2-Dihydro-2-(1,3-dihydro-3-oxo-2H-indol-2-yliden)-3H-indol-3-on (CI73000), 1,3-Bis(dicyanomethylen)indan, and mixture thereof.

In an embodiment, the direct dye is a basic dye. In an embodiment, the basic dye is selected from the group consisting of: 9-(Dimethylamino)-benzo[a]phenoxazin-7-ium-chloride (CI51175; Basic Blue No. 6), Di[4-(diethylamino)phenyl][4-(ethylamino)naphthyl]carbenium-chloride (CI42595; Basic Blue No. 7), Di-(4-(dimethylamino)phenyl)-(4-(methyl-phenylamino)naphthalin-1-yl)carbenium-chloride (CI42563; Basic Blue No. 8), 3,7-Di(dimethylamino)phenothiazin-5-ium-chloride (CI52015; Basic Blue No. 9), Di[4-(dimethylamino)phenyl][4-(phenylamino)naphthyl]carbenium-chloride (CI44045; Basic Blue No. 26), 2-[(4-(Ethyl(2-hydroxyethyl)amino)phenyl)azo]-6-methoxy-3-methyl-benzothiazolium-methylsulfate (CI11154; Basic Blue No. 41), Basic Blue No. 77), 8-Amino-2-bromo-5-hydroxy-4-imino-6-[(3-(trimethylammonio)phenyl)amino]-1(4H)-naphthalinone-chloride (CI56059; Basic

Blue No. 99), Bis[4-(dimethylamino)phenyl][4-(methylamino)phenyl]carbenium-chloride (CI42535; Basic Violet No. 1), Tri(4-amino-3-methylphenyl)carbenium-chloride (CI42520; Basic Violet No. 2), Tris[4-(dimethylamino)phenyl]carbenium-chloride (CI42555; Basic Violet No. 3), 2-[3,6-(Diethylamino)dibenzopyranium-9-yl]-benzoic acide chloride (CI45170; Basic Violet No. 10), Di(4-aminophenyl)(4-amino-3-methylphenyl)carbenium-chloride (CI42510; Basic Violet No. 14), 1,3-Bis[(2,4-diamino-5-methylphenyl)azo]-3-methylbenzene (CI21010;Basic Brown No. 4), 1-[(4-Aminophenyl)azo]-7-(trimethylammonio)-2-naphthol-chloride (CI12250; Basic Brown No. 16), 3-[(4-Amino-2,5-dimethoxyphenyl)azo]-N,N,N-trimethylbenzeneaminium-chloride (CI112605, Basic Orange No. 69), 1-[(4-Amino-2-nitrophenyl)azo]-7-(trimethylammonio)-2-naphthol-chloride (Basic Brown No. 17), 1-[(4-Amino-3-nitrophenyl)azo]-7-(trimethylammonio)-2-naphthol-chloride (CI12251; Basic Brown No. 17), 2-((4-Aminophenyl)azo)-1,3-dimethyl-1H-imidazol-3-ium-chloride (Basic Orange No. 31), 3,7-Diamino-2,8-dimethyl-5-phenylphenazinium-chloride (CI50240; Basic Red No. 2), 1,4-Dimethyl-5-[(4-(dimethylamino)phenyl)azo]-1,2,4-triazolium-chloride (CI11055; Basic Red No. 22), 1,3-Dimethyl-2-((4-dimethylamino)phenyl)azo-1H-imidazol-3-ium-chloride (Basic Red No. 51), 2-Hydroxy-1-[(2-methoxyphenyl)azo]-7-(trimethylammonio)-naphthalin-chloride (CI12245; Basic Red No. 76), 2-[2-((2,4-Dimethoxyphenyl)amino)ethenyl]-1,3,3-trimethyl-3H-indol-1-ium-chloride (CI48055; Basic Yellow No. 11), 3-Methyl-1-phenyl-4-[(3-(trimethylammonio)phenyl)azo]-pyrazol-5-on-chloride (CI12719; Basic Yellow No. 57), Di[4-(dimethylamino)phenyl]iminomethan-hydrochloride (CI41000; Basic Yellow No. 2), 1-Methyl-4-((methyl-phenylhydrazono)methyl)-pyridinium-methylsulfate (Basic Yellow No. 87), Bis[4-(diethylamino)phenyl]phenylcarbenium-hydrogensulfate (1:1) (CI42040; Basic Green No. 1), Di(4-(dimethylamino)phenyl)-phenylmethanol (CI42000; Basic Green No. 4), 1-(2-Morpholiniumpropylamino)-4-hydroxy-9,10-anthraquinone-methylsulfate, 1-[(3-(Dimethyl-propylaminium)propyl)amino]-4-(methylamino)-9,10-anthraquinone-chloride, and mixtures thereof.

In an embodiment, the direct dye is a neutral azo dye. In an embodiment, the neutral azo dye is selected from the group consisting of: 1-[Di(2-hydroxyethyl)amino]-3-methyl-4-[(4-nitrophenyl)azo]benzene (CI11210, Disperse Red No. 17), 1-[Di(2-hydroxyethyl)amino]-4-[(4-nitrophenyl)azo]benzene (Disperse Black No. 9), 4-[(4-Aminophenyl)azo]-1-[di(2-hydroxyethyl)amino]-3-methylbenzene (HC Yellow No. 7), 2,6-Diamino-3-[(pyridin-3-yl)azo]pyridine, 2-((4-(Acetylamino)phenyl)azo)-4-methylphenol (CI11855; Disperse Yellow

No. 3); 2-((4-(Ethyl(2-hydroxyethyl)amino)-2-methylphenyl)azo)-5-nitro-1,3-thiazole (CI11935; Disperse Blue No. 106), and mixtures thereof.

In an embodiment, the direct dye is an acid dye. In an embodiment, the acid dye is selected from the group consisting of: 6-Hydroxy-5-[(4-sulfophenyl)azo]-2-naphthalinesulfonic acid disodium salt (CI15985; Food Yellow No. 3; FD&C Yellow No. 6), 2,4-Dinitro-1-naphthol-7-sulfonic acid disodium salt (CI10316; Acid Yellow No. 1; Food Yellow No. 1), 2-(Indan-1,3-dion-2-yl)quinoline-x,x-sulfonic acid (mixture of mono- und disulfonic acid) (CI47005; D&C Yellow No. 10; Food Yellow No. 13, Acid Yellow No. 3), 5-Hydroxy-1-(4-sulfophenyl)-4-[(4-sulfophenyl)azo]pyrazol-3-carboxylic acid trisodium salt (CI19140; Food Yellow No. 4; Acid Yellow No. 23), 9-(2-Carboxyphenyl)-6-hydroxy-3H-xanthen-3-one (CI45350; Acid Yellow No. 73; D&C Yellow No. 8), 4-((4-Amino-3-sulfophenyl)azo)benzenesulfonic acid disodium salt (CI13015, Acid Yellow No. 9), 5-[(2,4-Dinitrophenyl)amino]-2-phenylamino-benzenesulfonic acid sodium salt (CI10385; Acid Orange No. 3), 4-[(2,4-Dihydroxyphenyl)azo]-benzenesulfonic acid monosodium salt (CI14270; Acid Orange No. 6), 4-[(2-Hydroxynaphth-1-yl)azo]-benzenesulfonic acid sodium salt (CI15510; Acid Orange No. 7), 4-((2-Hydroxy-naphthalin-1-yl)azo)-3-methyl-benzenesulfonic acid sodium salt (CI15575; Acid Orange No. 8), 4-[(2,4-Dihydroxy-3-[(2,4-dimethylphenyl)azo]phenyl)azo]-benzenesulfonic acid sodium salt (CI20170; Acid Orange No. 24), 3‘,6‘-Dihydroxy-4‘,5‘-diiodospiro(isobenzofuran-1(3H)-9‘-(9H)xanthen)-3-one (CI45425, D&C Orange No. 10), 4-Hydroxy-3-[(4-sulfonaphth-1-yl)azo]-1-naphthalinesulfonic acid disodium salt (CI14720; Acid Red No. 14), 4-Hydroxy-3-[(2-methoxy-phenyl)azo]-1-naphthalinesulfonic acid monosodium salt (CI14710; Acid Red No. 4), 6-Hydroxy-5-[(4-sulfonaphth-1-yl)azo]-2,4-naphthalinedisulfonic acid trisodium salt (CI16255; Ponceau 4R; Acid Red No. 18), 3-Hydroxy-4-[(4-sulfonaphth-1-yl)azo]-2,7-naphthalinedisulfonic acid trisodium salt (CI16185; Acid Red No. 27), 8-Amino-1-hydroxy-2-(phenylazo)-3,6-naphthalinedisulfonic acid disodium salt (CI17200; Acid Red No. 33), 5-(Acetylamino)-4-hydroxy-3-[(2-methylphenyl)azo]-2,7-naphthalinedisulfonic acid disodium salt (CI18065; Acid Red No. 35), 2-(3-Hydroxy-2,4,5,7-tetraiodo-dibenzopyran-6-on-9-yl)-benzoic acid disodium salt (CI45430;Acid Red No. 51), N-[6-(Diethylamino)-9-(2,4-disulfophenyl)-3H-xanthen-3-ylidene]-N-ethylethanammoniumhydroxide, inner salt, sodium salt (CI45100; Acid Red No. 52), 8-[(4-(Phenylazo)phenyl)azo]-7-naphthol-1,3-disulfonic acid disodium salt (CI27290; Acid Red No. 73), 2',4',5',7'-Tetrabromo-3',6'-dihydroxyspiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one disodium salt (CI45380; Acid Red No. 87), 2',4',5',7'-Tetrabromo-4,5,6,7-tetrachloro-3',6'-dihydroxyspiro[isobenzofuran-1(3H),9'[9H]xanthen]-3-one disodium salt

(CI45410; Acid Red No. 92), 3',6'-Dihydroxy-4',5'-diiodospiro[isobenzofuran-1(3H),9'(9H)-xanthen]-3-one disodium salt (CI45425; Acid Red No. 95), 2-Hydroxy-3-((2-hydroxynaphth-1-yl)azo)-5-nitrobenzenesulfonic acid monosodium salt (CI15685; Acid Red No. 184), (2-Sulfophenyl)di[4-(ethyl((4-sulfophenyl)methyl)amino)phenyl]carbenium disodium salt, betaine (CI42090; Acid Blue No. 9; FD&C Blue No. 1), 3-Hydroxy-4-((4-methyl-2-sulfophenyl)azo)-2-naphthalinecarboxylic acid disodium salt (CI15850; D&C Red No. 6), 6-Hydroxy-5-((2-methoxy-5-methyl-4-sulfophenyl)azo)-2-naphthalinesulfonic acid disodium salt (CI16035; FD&C Red 40), 1,4-Bis[(2-sulfo-4-methylphenyl)amino]-9,10-anthraquinone disodium salt (CI 61570; Acid Green No. 25), Bis[4-(dimethylamino)phenyl]-(3,7-disulfo-2-hydroxynaphth-1-yl) carbenium inner salt, mononsodium salt (CI44090; Food Green No. 4; Acid Green No. 50), Bis[4-(diethylamino)phenyl](2,4-disulfophenyl)carbenium inner salt, sodium salt (2:1) (CI42045; Food Blue No. 3; Acid Blue No. 1), Bis[4-(diethylamino)phenyl](5-hydroxy-2,4-disulfophenyl)carbenium inner salt, calcium salt (2:1) (CI42051; Acid Blue No. 3), 1-Amino-4-(cyclohexylamino)-9,10-anthraquinone-2-sulfonic acid sodium salt (CI62045; Acid Blue No. 62), 3,3-Bis(3,5-dibromo-4-hydroxyphenyl)-4,5,6,7-tetrabromo-2,1(3h)-benzoxathiol-1,1-dioxide, 1-Amino-4-(phenylamino)-9,10-anthraquinone-2-sulfonic acid (CI62055; Acid Blue No. 25), 2-(1,3-Dihydro-3-oxo-5-sulfo-2H-indol-2-ylidene)-2,3-dihydro-3-oxo-1H-indol-5-sulfonic acid disodium salt (CI73015; Acid Blue No. 74), 9-(2-Carboxyphenyl)-3-[(2-methylphenyl)amino]-6-[(2-methyl-4-sulfophenyl)amino]xanthylium inner salt, mononsodium salt (CI45190; Acid Violet No. 9), 1-Hydroxy-4-[(4-methyl-2-sulfophenyl)amino]-9,10-anthraquinone sodium salt (CI60730; D&C Violet No. 2; Acid Violet No. 43), Bis[3-nitro-4-[(4-phenylamino)-3-sulfo-phenylamino]phenyl]sulfone (CI10410; Acid Brown No. 13), 5-Amino-4-hydroxy-6-[(4-nitrophenyl)azo]-3-(phenylazo)-2,7-naphthaline disulfonic acid disodium salt (CI20470; Acid Black No. 1), 3-Hydroxy-4-[(2-hydroxynaphth-1-yl)azo]-7-nitro-1-naphthalinesulfonic acid chromium complex (3:2) (CI15711; Acid Black No. 52), 3-[(2,4-Dimethyl-5-sulfophenyl)azo]-4-hydroxy-1-naphthalinesulfonic acid disodium salt (CI14700; Food Red No. 1; Ponceau SX; FD&C Red No. 4), 4-(Acetylamino)-5-hydroxy-6-[(7-sulfo-4-[(4-sulfophenyl)azo]naphth-1-yl)azo]-1,7-naphthalinedisulfonic acid tetrasodium salt (CI28440; Food Black No. 1), 3-Hydroxy-4-(3-methyl-5-oxo-1-phenyl-4,5-dihydro-1H-pyrazol-4-ylazo)-naphthaline-1-sulfonic acid sodium salt, chromium complex (Acid Red No. 195), and mixtures thereof.

In an embodiment, the direct dye is selected from the group consisting of: Acid dyes such as Acid Yellow 1, Acid Orange 3, Acid Black 1, Acid Black 52, Acid Orange 7, Acid Red 33, Acid Yellow 23, Acid Blue 9, Acid Violet 43, Acid Blue 62, Acid Blue 25, Acid Red 4; Basic Dyes such as Basic Brown 17, Basic Red 118, Basic Orange 69, Basic Red 76, Basic Brown 16, Basic Yellow 57, Basic Violet 14, Basic Blue 7, Basic Blue 26, Basic Red 2, Basic Blue 99, Basic Yellow 29, Basic Red 51, Basic Orange 31, Basic Yellow 87, 4-(3-(4-amino-9,10-dioxo-9,10-dihydroanthracen-1-ylamino)propyl)-4-methylmorpholin-4-ium-methylsulfate, (E)-1-(2-(4-(4,5-dimethylthiazol-2-yl)diazenyl)phenyl)(ethyl)amino)ethyl)-3-methyl-1H-imidazol-3-ium chloride, (E)-4-(2-(4-(dimethylamino)phenyl)diazenyl)-1-methyl-1H-imidazol-3-ium-3-yl)butane-1-sulfonate, (E)-4-(4-(2-methyl-2-phenylhydrazono)methyl)pyridinium-1-yl)butane-1-sulfonate, N,N-dimethyl-3-(4-(methylamino)-9,10-dioxo-4a,9,9a,10-tetrahydroanthracen-1-ylamino)-N-propylpropan-1-aminium bromide; Disperse Dyes such as Disperse Red 17, Disperse Violet 1, Disperse Red 15, Disperse Violet 1, Disperse Black 9, Disperse Blue 3, Disperse Blue 23, Disperse Blue 377; Nitro Dyes such as 1-(2-(4-nitrophenylamino)ethyl)urea, 2-(4-methyl-2-nitrophenylamino)ethanol, 4-nitrobenzene-1,2-diamine, 2-nitrobenzene-1,4-diamine, Picramic acid, HC Red No. 13, 2,2'-(2-nitro-1,4-phenylene)bis(azanediyl)diethanol, HC Yellow No. 5, HC Red No. 7, HC Blue No.2, HC Yellow No. 4, HC Yellow No. 2, HC Orange No. 1, HC Red No. 1, 2-(4-amino-2-chloro-5-nitrophenylamino)ethanol, HC Red No. 3, 4-amino-3-nitrophenol, 4-(2-hydroxyethylamino)-3-nitrophenol, 2-amino-3-nitrophenol, 2-(3-(methylamino)-4-nitrophenoxy)ethanol, 3-(3-amino-4-nitrophenyl)propane-1,2-diol, HC Yellow No. 11, HC Violet No. 1, HC Orange No. 2, HC Orange No. 3, HC Yellow No. 9, HC Red No. 10, HC Red No. 11, 2-(2-hydroxyethylamino)-4,6-dinitrophenol, HC Blue No. 12, HC Yellow No. 6, HC Yellow No. 12, HC Blue No. 10, HC Yellow No. 7, HC Yellow No. 10, HC Blue No. 9, 2-chloro-6-(ethylamino)-4-nitrophenol, 6-nitropyridine-2,5-diamine, HC Violet No. 2, 2-amino-6-chloro-4-nitrophenol, 4-(3-hydroxypropylamino)-3-nitrophenol, HC Yellow No. 13, 6-nitro-1,2,3,4-tetrahydroquinoxaline, HC Red No. 14, HC Yellow No. 15, HC Yellow No. 14, N2-methyl-6-nitropyridine-2,5-diamine, N1-allyl-2-nitrobenzene-1,4-diamine, HC Red No. 8, HC Green No.1, HC Blue No. 14; and natural dyes such as Annato, Anthocyanin, Beetroot, Carotene, Capsanthin, Lycopene, Chlorophyll, Henna, Indigo, Cochineal; and mixtures thereof.

The first composition and/or the second composition may comprise an oxidative dye compound. In an embodiment, the first and/or second composition comprise a thickening formulation, wherein the colour formulation comprises an oxidative dye compound. The oxidative dye compound may be selected from the group consisting of: primary intermediates, couplers, and mixtures thereof. The oxidative dye compound may also be in the form of a oxidative stable direct dye. The oxidative dye compounds suitable for use in composition described herein, in so far as they are bases, may be used as free bases or in the form of their physiologically compatible salts with organic or inorganic acids, such as hydrochloric, hydrobromic, citric, acetic, lactic, succinic, tartaric, or sulfuric acids, or, in so far as they have aromatic hydroxyl groups, in the form of their salts with bases, such as alkali phenolates.

Oxidative dye compounds are known in the art, and include aromatic diamines, aminophenols, aromatic diols and their derivatives (a representative but not exhaustive list of oxidation dye precursor can be found in Sagarin, "Cosmetic Science and Technology", "Interscience, Special Edn. Vol. 2 pages 308 to 310). It is to be understood that the primary intermediates and couplers (precursors) detailed below are only by way of example and are not intended to limit the compositions and processes herein. In an embodiment, the primary intermediates and couplers are selected from the group consisting of: 1,7-Dihydroxynaphthalene (1,7-NAPHTHALENEDIOL); 1,3-Diaminobenzene (m-PHENYLENEDIAMINE); 1-Methyl-2,5-diaminobenzene (TOLUENE-2,5-DIAMINE); 1,4-Diaminobenzene (p-PHENYLENEDIAMINE); 1,3-Dihydroxybenzene (RESORCINOL); 1,3-Dihydroxy-4-chlorobenzene, (4-CHLORORESORCINOL); 1-Hydroxy-2-aminobenzene, (o-AMINOPHENOL); 1-Hydroxy-3-aminobenzene (m-AMINOPHENOL); 1-Hydroxy-4-amino-benzene (p-AMINOPHENOL); 1-Hydroxynaphthalene (1-NAPHTHOL); 1,5-Dihydroxynaphthalene (1,5-NAPHTHALENEDIOL); 2,7-dihydroxynaphthalene (2,7-NAPHTHELENEDIOL); 1,4-Dihydroxybenzene (HYDROQUINONE); 1-Hydroxy-4-methylaminobenzene (p-METHYLAMINOPHENOL); 6-Hydroxybenzo-morpholine (HYDROXYBENZOMORPHOLINE); 1-Methyl-2-hydroxy-4-aminobenzene (4-AMINO-2-HYDROXY-TOLUENE); 1-Methyl-2-hydroxy-4-(2'-hydroxyethyl)aminobenzene (2-METHYL-5-HYDROXY-ETHYLAMINO-PHENOL); 1,2,4-Trihydroxybenzene (1,2,4-TRIHYDROXYBENZENE); 1-Phenol-3-methylpyrazol-5-on (PHENYLMETHYLPYRAZOLONE); 1-(2'-Hydroxyethyloxy)-2,4-diaminobenzene (2,4-DIAMINOPHENOXY-ETHANOL HCL); 1-Hydroxy-3-amino2,4-dichlorobenzene (3-AMINO-2,4-DICHLORO-PHENOL); 1,3-Dihydroxy-2-methylbenzene (2-METHYLRESORCINOL); 1-Amino-4-bis-(2'-hydroxyethyl)aminobenzene (N,N-BIS(2-HYDROXY-ETHYL)-p-PHENYLENE-DIAMINE); 2,4,5,6-Tetraaminopyrimidine (HC Red 16); 1-Hydroxy-3-methyl-4-aminobenzene (4-AMINO-m-CRESOL); 1-Hydroxy-2-amino-5-methylbenzene (6-AMINO-m-CRESOL); 1,3-Bis-(2,4-Diaminophenoxy)propane (1,3-BIS-(2,4-DIAMINO-PHENOXY)-PROPANE);1-(2'-Hydroxyethyl)-2,5-diaminobenzene (HYDROXYETHYL-p-PHENYLENE DIAMINE SULPHATE); 1-Methoxy-2-amino-4-(2'-hydroxyethylamino)benzene, (2-AMINO-4-

HYDROXYETHYLAMINOANISOLE); 1-Hydroxy-2-methyl-5-amino-6-chlorobenzene (5-AMINO-6-CHLORO-o-CRESOL); 1-Hydroxy-2-amino-6-methylbenzene (6-AMINO-o-CRESOL); 1-(2'-Hydroxyethyl)-amino-3,4-methylenedioxybenzene (HYDROXYETHYL-3,4-METHYLENEDIOXY-ANILINE HCl); 2,6-Dihydroxy-3,4-dimethylpyridine (2,6-DIHYDROXY-3,4-DIMETHYLPYRIDINE); 3,5-Diamino-2,6-dimethoxypyridine (2,6-DIMETHOXY-3,5-PYRIDINEDIAMINE); 5,6-Dihydroxyindole (5,6-DIHYDROXY-INDOLE); 4-Amino-2-aminomethylphenol (2-AMINOETHYL-p-AMINO-PHENOL HCl); 2,4-Diamino-5-methylphenetol (2,4-DIAMINO-5-METHYL-PHENETOLE HCl); 2,4-Diamino-5-(2'-hydroxyethyloxy)toluene (2,4-DIAMINO-5-METHYLPHENOXYETHANOL HCl); 5-Amino-4-chloro-2-methylphenol (5-AMINO-4-CHLORO-o-CRESOL); 1,3-Bis(N(2-Hydroxyethyl)N(4-amino-phenyl)amino)-2-propanol (HYDROXYPROPYL-BIS-(N-HYDROXY-ETHYL-p-PHENYLENEDIAMINE)HCL); 6-Hydorxyindole (6-HYDROXY-INDOLE); 2,3-Indolinedione (ISATIN); 3-Amino-2-methylamino-6-methoxypyridine (HC BLUE NO. 7); 1-Phenyl-3-methyl-5-pyrazolone (2,4-DIHYDRO-5-METHYL-2-PHENYL-3H-PYRAZOL-3-ONE); 2-Amino-3-hydroxypyridine (2-AMINO-3-HYDROXYPYRIDINE); 5-Amino-salicylic acid; 1 -Methyl-2,6-bis(2-hydroxy-ethylamino)benzene (2,6-HYDROXYETHYLAMINO-TOLUENE); 4-Hydroxy-2,5,6-triaminopyrimidine (2,5,6-TRIAMINO-4-PYRIMIDINOL SULPHATE); 2,2'-[1,2-Ethanediyl-bis-(oxy-2,1-ethanediyloxy)]-bis-benzene-1,4-diamine (PEG-3,2',2'-DI-p-PHENYLENEDIAMINE); 5,6-Dihydroxyindoline (DIHYDROXYINDOLINE); N,N-Dimethyl-3-ureidoaniline (m-DIMETHYL-AMINO-PHENYLUREA); 2,4-Diamino-5-fluortoluenesulfatehydrate (4-FLUORO-6-METHYL-m-PHENYLENEDIAMINE SULPHATE); 1-Acetoxy-2-methylnaphthalene (1-HYDROXYYETHYL-4,5-DIAMINOPYRAZOLE SULPHATE);1-acetoxy-2-methylnaphthalene (2-METHYL-1-NAPHTHOL);2-amino-5-ethylphenol (2-AMINO-5-ETHYLPHENOL); 2,4-dichloro-3-aminophenol (3-AMINO-2,4-DICHLOROPHENOL); and p-Anilinoaniline (N-PHENYL-P-PHENYLENEDIAMINE); and mixtures thereof. These can be used in the molecular form or in the form of salts.

In an embodiment, the primary intermediate is selected from the group consisting of: 1,4-Diaminobenzen (p-Phenylenediamine), 1,4-Diamino-2-methylbenzene (p-Toluylenediamine), 1,4-Diamino-2,6-dimethylbenzene, 1,4-Diamino-3,5-diethylbenzene, 1,4-Diamino-2,5-dimethylbenzene, 1,4-Diamino-2,3-dimethylbenzene, 2-Chloro-1,4-diaminobenzene, 1,4-Diamino-2-(thiophen-2-yl)benzene, 1,4-Diamino-2-(thiophen-3-yl)benzene, 2-(6-2,5-Methyl-pyridin-2-yl)-benzene-1,4-diamine, 2-Thiazol-2-yl-benzene-1,4-diamino, 1,4-Diamino-2-

(pyridin-3-yl)benzene, 2,5-Diaminobiphenyl, 2,5-Diamino-4'-(1-methylethyl)-1,1'-biphenyl, 2,3',5-Triamino-1,1'-biphenyl, 2‘-Chloro-1,1‘-biphenyl-2,5-diamine, 3‘-Fluoro-1,1‘-biphenyl-2,5-diamine, 1,4-Diamino-2-methoxymethylbenzene, 1,4-Diamino-2-aminomethylbenzene, 3-(3-Amino-phenylamino-propenyl)-benzene-1,4-diamine, 2-Propenylbenzene-1,4-diamine, 1,4-Diamino-2-((phenylamino)methyl)-benzene, 1,4-Diamino-2-((ethyl-(2-hydroxyethyl)-amino)methyl)benzene, 1,4-Diamino-2-hydroxymethylbenzene, 1,4-Diamino-2-(2-hydroxyethoxy)-benzene, 2-(2-(Acetylamino)ethoxy)-1,4-diaminobenzene, 4-(Phenyl-amino)aniline, 4-(Dimethylamino)aniline, 4-(Diethylamino)aniline, 4-(Dipropylamino)aniline, 4-[Ethyl(2-hydroxyethyl)amino]aniline, 4-[Di(2-hydroxyethyl)amino]aniline, 4-[Di(2-hydroxyethyl)amino]-2-methyl-aniline, 4-[(2-Methoxyethyl)amino]aniline, 4-[(3-Hydroxypropyl)amino]aniline, 4-[(2,3-Dihydroxypropyl)amino]aniline, 4-(((4-Aminophenyl)methyl)amino)aniline, 4-[(4-Amino-phenylamino)-methyl]-phenol, 3-((4-Amino-phenylamino)methyl)phenol, 1,4-Diamino-N-(4-pyrrolidin-1-yl-benzyl)benzene, 1,4-Diamino-N-furan-3-ylmethylbenzene, 1,4-Diamino-N-thiophen-2-ylmethylbenzene, 1,4-Diamino-N-furan-2-ylmethylbenzene, 1,4-Diamino-N-thiophen-3-ylmethylbenzene, 1,4-Diamino-N-benzylbenzene, 1,4-Diamino-2-(1-hydroxyethyl)benzene, 1,4-Diamino-2-(2-hydroxyethyl)benzene, 1,4-Diamino-2-(1-methylethyl)benzene, 1,3-Bis[(4-aminophenyl)(2-hydroxyethyl)amino]-2-propanol, 1,4-Bis[(4-Aminophenyl)amino]-butane, 1,8-Bis(2,5-diaminophenoxy)-3,6-dioxaoctane, 2,5-Diamino-4‘-hydroxy-1,1‘-biphenyl, 2,5-Diamino-2‘-trifluoromethyl-1,1‘-biphenyl, 2,4‘,5-Triamino-1,1‘-biphenyl, 4-Amino-phenol, 4-Amino-3-methylphenol, 4-Amino-3-(hydroxymethyl)-phenol, 4-Amino-3-fluoro-phenol, 4-Methylamino-phenol, 4-Amino-2-(aminomethyl)phenol, 4-Amino-2-(hydroxymethyl)phenol, 4-Amino-2-fluorophenol, 4-Amino-2-[(2-hydroxyethyl)-amino]methyl-phenol, 4-Amino-2-methyl-phenol, 4-Amino-2-(methoxy-methyl)phenol, 4-Amino-2-(2-hydroxyethyl)phenol, Bis(5-amino-2-hydroxyphenyl)phenol, 5-Amino-salicylic acid, 2,5-Diamino-pyridine, 2,4,5,6-Tetraamino-pyrimidine, 2,5,6-Triamino-4-(1H)-pyrimidone, 4,5-Diamino-1-(2-hydroxyethyl)-1H-pyrazole, 4,5-Diamino-1-(1-methylethyl)-1H-pyrazole, 4,5-Diamino-1-[(4-methylphenyl)methyl]-1H-pyrazole, 1-[(4-Chlorophenyl)methyl]-4,5-diamino-1H-pyrazole, 4,5-Diamino-1-methyl-1H-pyrazole, 4,5-Diamino-1-pentyl-1H-pyrazole, 4,5-Diamino-1-(phenylmethyl)-1H-pyrazole, 4,5-Diamino-1-((4-methoxyphenyl)methyl-1H-pyrazole, 2-Aminophenol, 2-Amino-6-methylphenol, 2-Amino-5-methyl-phenol, 4-Amino-1,1‘-biphenyl-3-ol, 2-Amino-5-ethylphenol, 1,2,4-Trihydroxybenzene, 2,4-Diaminophenol, 1,4-Dihydroxybenzene, 2-(((4-Aminophenyl)amino)methyl)-1,4-diaminobenzene, and mixtures thereof. In an embodiment, the primary intermediate is 2-

methoxymethyl-1,4-benzenediamine, which may be preferred due to improved sensitisation profile. This may be preferred for the present invention due to the method comprising a styling step.

In an embodiment, the coupler is selected from the group consisting of: N-((3-Dimethylamino)phenyl)urea, 2,6-Diaminopyridine, 2-Amino-4-[(2-hydroxyethyl)amino]-anisole, 2,4-Diamino-1-fluoro-5-methylbenzene, 2,4-Diamino-1-methoxy-5-methylbenzene, 2,4-Diamino-1-ethoxy-5-methylbenzene, 2,4-Diamino-1-(2-hydroxyethoxy)-5-methylbenzene, 2,4-Di[(2-hydroxyethyl)amino]-1,5-dimethoxybenzene, 2,3-Diamino-6-methoxypyridine, 3-Amino-6-methoxy-2-(methylamino)pyridine, 2,6-Diamino-3,5-dimethoxypyridine, 3,5-Diamino-2,6-dimethoxypyridine, 1,3-Diaminobenzene, 2,4-Diamino-1-(2-hydroxyethoxy)benzene, 1,3-Diamino-4-(2,3-dihydroxypropoxy)benzene, 1,3-Diamino-4-(3-hydroxypropoxy)benzene, 1,3-Diamino-4-(2-methoxyethoxy)benzene, 2,4-Diamino-1,5-di(2-hydroxyethoxy)benzene, 1-(2-Aminoethoxy)-2,4-diaminobenzene, 2-Amino-1-(2-hydroxyethoxy)-4-methylaminobenzene, 2,4-Diaminophenoxyacetic acid, 3-[Di(2-hydroxyethyl)amino]aniline, 4-Amino-2-di[(2-hydroxyethyl)amino]-1-ethoxybenzene, 5-Methyl-2-(1-methylethyl)phenol, 3-[(2-Hydroxyethyl)amino]aniline, 3-[(2-Aminoethyl)amino]aniline, 1,3-Di(2,4-diaminophenoxy)propane, Di(2,4-diaminophenoxy)methane, 1,3-Diamino-2,4-dimethoxybenzene, 2,6-Bis(2-hydroxyethyl)amino-toluene, 4-Hydroxyindole, 3-Dimethylaminophenol, 3-(Diethylamino)phenol, 5-Amino-2-methylphenol, 5-Amino-4-fluoro-2-methylphenol, 5-Amino-4-methoxy-2-methylphenol, 5-Amino-4-ethoxy-2-methylphenol, 3-Amino-2,4-dichlorophenol, 5-Amino-2,4-dichlorophenol, 3-Amino-2-methylphenol, 3-Amino-2-chloro-6-methylphenol, 3-Amino-phenol, 2-[(3-Hydroxyphenyl)amino]acetamide, 5-[(2-Hydroxyethyl)amino]-4-methoxy-2-methylphenol, 5-[(2-Hydroxyethyl)amino]-2-methylphenol, 3-[(2-Hydroxyethyl)amino]phenol, 3-[(2-Methoxyethyl)amino]phenol, 5-Amino-2-ethylphenol, 5-Amino-2-methoxyphenol, 2-(4-Amino-2-hydroxyphenoxy)ethanol, 5-[(3-Hydroxypropyl)amino]-2-methylphenol, 3-[(2,3-Dihydroxypropyl)amino]-2-methylphenol, 3-[(2-Hydroxyethyl)amino]-2-methylphenol, 2-Amino-3-hydroxypyridine, 2,6-Dihydroxy-3,4-dimethylpyridine, 5-Amino-4-chloro-2-methylphenol, 1-Naphthol, 2-Methyl-1-naphthol, 1,5-Dihydroxynaphthalene, 1,7-Dihydroxynaphthalene, 2,3-Dihydroxynaphthalene, 2,7-Dihydroxynaphthalene, 2-Methyl-1-naphthol-acetate, 1,3-Dihydroxybenzene, 1-Chloro-2,4-dihydroxybenzene, 2-Chloro-1,3-dihydroxybenzene, 1,2-Dichloro-3,5-dihydroxy-4-methyl-benzene, 1,5-Dichloro-2,4-dihydroxybenzene, 1,3-Dihydroxy-2-methylbenzene, 3,4-Methylenedioxyphenol, 3,4-Methylenedioxyaniline, 5-[(2-Hydroxyethyl)amino]-1,3-

benzodioxole, 6-Bromo-1-hydroxy-3,4-methylenedioxybenzene, 3,4-Diaminobenzoic acid, 6-Hydroxybenzomorpholine, 6-Aminobenzomorpholine, 3-Methyl-1-phenyl-5-pyrazolone, 5,6-Dihydroxyindole, 5,6-Dihydroxyindoline, 5-Hydroxyindole, 6-Hydroxyindole, 7-Hydroxyindole, 2,3-Indolinedione.

The above mentioned primary intermediates and couplers may be present in an amount of from about 0.001% to about 12%, or from about 0.01% to about 10%, or from about 0.05% to about 9%, by total weight of the colour formulation.

In an embodiment, all compositions/formulations herein are substantially free of a direct dye.

In an embodiment, the first and/or second composition comprise an oxidizing agent. The oxidizing agent may be present in an amount sufficient to bleach melanin pigment in hair and/or cause formation of dye chromophores from oxidative dye compounds (including primary intermediates and/or couplers, when present). In an embodiment, the thickening formulation and/or the developing formulation comprise an oxidising agent. In an embodiment, the oxidising agent is present in an amount of from about 0.1% to about 20%, or from about 0.5% to about 12%, or from about 1% to about 10%, or from about 3% to about 10%, or from about 5% to about 10% by total weight of the thickening formulation or the developing formulation. In an embodiment, the oxidising agent is present in an amount of from about 0.1% to about 20%, or from about 1% to about 10%, or from about 2% to about 5%, by total weight of the first composition or the second composition.

Inorganic peroxygen materials capable of yielding hydrogen peroxide in an aqueous medium are preferred. In an embodiment, the oxidising agent is selected from group consisting of: hydrogen peroxide; inorganic alkali metal peroxides (e.g. sodium periodate and sodium peroxide); organic peroxides (e.g. urea peroxide, melamine peroxide); inorganic perhydrate salt bleaching compounds (e.g. alkali metal salts of perborates, percarbonates, perphosphates, persilicates, and persulphates, preferably sodium salts thereof), which may be incorporated as monohydrates, tetrahydrates, etc.; alkali metal bromates; enzymes; and mixtures thereof. In one embodiment, the oxidizaing agents of the present invention are selected from percarbonates (such as sodium percarbonate, ammonium percarbonate and potassium percarbonate); and persulphates (such as sodium persulphate, ammonium persulphate, and potassium persulphate). In another embodiment, the oxidizing agent is selected from: sodium percarbonate and/or ammonium persulfate.

A composition and/or formulation as described herein may comprise at least one source of peroxymonocarbonate ions, preferably formed *in situ* from a source of hydrogen peroxide and a carbonate ion source. The composition/formulation thus also may comprise a source of carbonate ions or carbamate ions or hydrocarbonate ions or any mixture thereof. The source may be selected from the group consisting of: sodium, potassium, guanidine, arginine, lithium, calcium, magnesium, barium, ammonium salts of carbonate, carbamate and hydrocarbonate ions, and mixtures thereof. Examples of mixtures thereof are: sodium carbonate, sodium hydrogen carbonate, potassium carbonate, potassium hydrogen carbonate, guanidine carbonate, guanidine hydrogen carbonate, lithium carbonate, calcium carbonate, magnesium carbonate, barium carbonate, ammonium carbonate, ammonium hydrogen carbonate, and mixtures thereof. Percarbonate salts may also be utilized to provide both the source of carbonate ions and oxidizing agent. The source of carbonate ions, carbamate and hydrocarbonate ions may be selected from the group consisint of: sodium hydrogen carbonate, potassium hydrogen carbonate, ammonium carbamate, and mixtures thereof.

A composition and/or formulation as described herein may comprise a radical scavenger, in a sufficient amount to reduce damage to the hair during an oxidative bleaching or colouring process. The radical scavenger is preferably selected such that it is not an identical species to an alkalizing agent. The radical scavenger is a species that can react with a carbonate radical to convert the carbonate radical by a series of fast reactions to a less reactive species. The radical scavenger may be selected from the classes of: alkanolamines, amino sugars, amino acids, and mixtures thereof. The radical scavenger may be selected from the group consisting of: monoethanolamine, 3-amino-1-propanol, 4-amino-1-butanol,5-amino-1-pentanol, 1-amino-2-propanol, 1-amino-2-butanol, 1-amino-2-pentanol, 1-amino-3-pentanol, 1-amino-4-pentanol, 3-amino-2-methylpropan-1-ol, 1-amino-2-methylpropan-2-ol, 3-aminopropane-1,2-diol, glucosamine, N-acetylglucosamine, glycine, arginine, lysine, proline, glutamine, histidine, serine, tryptophan, and potassium, sodium and ammonium salts of the above, and mixtures thereof. In an embodiment, the radical scavenger compound is selected from the group consisting of: benzylamine, glutamic acid, imidazole, di-tert-butylhydroxytoluene, hydroquinone, catechol, and mixtures thereof.

A composition and/or formulation as described herein may comprise a chelant in an amount sufficient to reduce the amount of metals available to interact with formulation components, particularly oxidizing agents, more particularly peroxides. Chelants are also known as chelators. The chelant for use herein may be selected from the group consisting of: diamine-

N,N'-dipolyacid, monoamine monoamide-N,N'-dipolyacid, and N,N'-bis(2-hydroxybenzyl)ethylenediamine-N,N'-diacetic acid chelants (preferably EDDS (ethylenediaminedisuccinic acid)), carboxylic acids (preferably aminocarboxylic acids), phosphonic acids (preferably aminophosphonic acids), polyphosphoric acids (in particular straight polyphosphoric acids), salts and derivatives thereof, and mixtures thereof. In an embodiment, the chelant is ethylenediamine tetraacetic acid (EDTA) and/or editronic acid.

The first composition comprises a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. In an embodiment, the second composition comprises a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. The first composition and/or the second composition may comprise from about 0.001% to about 10.0%, or from about 0.01% to about 5%, or from about 0.1% to about 3.0%, or from 0.15% to about 2.0%, or from about 0.25% to about 1.0%, of a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, by total weight of the first composition or the second composition. In an embodiment, a thickening formulation comprises a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the thickener is present in an amount of from about 1.0% to about 30%, or from about 5% to about 25%, from about 10% to about 25%, or from about 15% to about 20%, by total weight of the thickening formulation. The thickening formulation may further comprise an oxidising agent, wherein the oxidising agent is preferably hydrogen peroxide.

In an embodiment, the thickener is an associative thickener or an associative thickening polymer. In an embodiment, the associative thickening polymer comprises hydrophobic moieties and hydrophilic moieties. The hydrophobic and hydrophilic moieties are important since they help the thickener interact with the hydrophobic phase and the hydrophilic phase. In an embodiment, the hydrophobic moieties of the associative thickening polymer are is capable of interacting with themselves and with the hydrophobic phase of the first or second compostion. In an embodiment, associative thickening polymer is a block copolymer comprising hydrophobic blocks and hydrophilic blocks. In an embodiment, associative thickening polymer comprises hydrophobic end moieties. In an embodiment, the hydrophobic moieties and/of hydrophobic blocks of the thickener consist of carbon and hydrogen atoms. In an embodiment, the hydrophobic moieties of the thickener comprise a saturated hydrocarbon chain consisting of carbon and hydrogen atoms. The associative thickening polymer may comprise a hydrophilic backbone substituted with at least one hydrophobic sidechain. The hydrophobic sidechain is important since it aids the associative thickener to interact with the hydrophobic phase. In an embodiment, the associative thickening polymer comprises a unit comprising a vinyl group and a sidechain capable of forming hydrophobic interactions. In an embodiment, the associative thickening polymer comprises a backbone comprising vinyl groups and the backbone is substituted with sidechains comprising hydrophobic groups. In an embodiment, the backbone comprises acrylate, itaconate and/or urethane groups. The hydrophobic sidechain may comprise at least about 8 carbon atoms, or at least about 10 carbon atoms, or from about 10 to about 30 carbon atoms, or from about 15 to about 25 carbon atoms. In an embodiment, the associative thickening polymer is selected from the group consisting of: Acrylates/Ceteth-20 Itaconate Copolymers, Polyurethane-39 polymers, Acrylates/Beheneth-25 Methacrylate Copolymers, Acrylates/C10-30 Alkyl Acrylate Crosspolymers, Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymers, and mixtures thereof. In an embodiment, the associative thickening polymer is an acrylates/ceteth-20 itaconate copolymer. Suitable thickeners may include: Luvigel® Star from BASF, Structure® 3001 from Akzo Nobel, Structure® 2001 from Akzo Nobel, Aculyn™ 28 from Dow Personal Care, Pemulen™ TR1 from Lubrizol, Pemulen™ TR2 from Lubrizol, Carbopol® Ultrez 20 from Lubrizol, Carbopol® Ultrez 21 from Lubrizol, Carbopol® Ultrez 10 from Lubrizol, ViscUp® EZ from Arch Chemicals, and mixtures thereof.

The first composition comprises a hydrophobic phase. In an embodiment, the second composition comprises a hydrophobic phase. In an embodiment, the hydrophobic phase comprises: fatty alcohols, fatty acids, or mixtures thereof. In an embodiment, the fatty alcohols and/or fatty acids comprise from 10 to 30, or from 12 to 20, or from 16 to 18 carbon atoms. In an embodiment, the colour formulation comprises a hydrophobic phase. In an embodiment, the hydrophobic phase comprises two different fatty alcohols. In an embodiment, the hydrophobic phase comprises two different fatty alcohols, both comprising from about 10 to about 14 carbons.

In an embodiment, the colour formulation comprises: (A) from about 10% to about 30% of a fatty alcohol with 10 to 24 carbon atoms; and one or more or preferably all of: (B) 0.2 to 6.0 w.% of at least one diester of formula: R^1-CO-O-(CH_2-CH2-O)$_n$-CO-R^2, where n is 1, 2 or 3, and R^1 and R^2 are the same or different alkyl radicals with 12 to 20 carbon atoms; (C) from about 0.5 to about 20% glycerine fatty acid ester with 10 to 24 carbon atoms; (D) from about 0.1% to about 10% of non-ionic and/or anionic and/or ampholytic surfactant, by total weight of colour formulation, and (E) the hair colouring composition has a pH of 4.5 to 12.5.

The first composition comprises a hydrophilic phase. In an embodiment, the second composition comprises a hydrophilic phase. The hydrophilic phase may be in the form of a cosmetically acceptable carrier, for example an aqueous cosmetically acceptable carrier. A composition and/or formulation as described herein may comprise a cosmetically acceptable carrier. The composition/formulation may comprise from about 60% to about 99.9%, or from about 70% to about 95%, or from about 80% to about 90%, of a cosmetically acceptable carrier, by total weight of the composition or formulation. The cosmetically acceptable carrier may comprise water; silicones such as volatile silicones, amino or non-amino silicone gums; organic compounds such as C_2-C_{10} alkanes, acetone, methyl ethyl ketone, volatile organic C_1-C_{12} alcohols, esters of C_1-C_{20} acids and of C_1-C_8 alcohols such as methyl acetate, butyl acetate, ethyl acetate, and isopropyl myristate, dimethoxyethane, diethoxyethane, C_{10}-C_{30} fatty alcohols such as lauryl alcohol, cetyl alcohol, stearyl alcohol, and behenyl alcohol; C_{10}-C_{30} fatty acids such as lauric acid and stearic acid; C_{10}-C_{30} fatty amides such as lauric diethanolamide; C_{10}-C_{30} fatty alkyl esters such as C_{10}-C_{30} fatty alkyl benzoates; hydroxypropylcellulose, and mixtures thereof. In an embodiment, the carrier comprises water, fatty alcohols, volatile organic alcohols, and mixtures thereof. In an embodiment, the cosmetically acceptable carrier is water.

A composition and/or formulation as described herein may comprise a pH modifier and/or buffering agent in an amount that is sufficiently effective to adjust the pH of the composition/formulation to fall within a range from about 3 to about 13, in some embodiments from about 8 to about 12, and even from about 8 to about 11. In some embodiments, the pH range for the carbonate ion source as described herein below is from about 8.5 to about 9.5, or from about 8.0 to about 9.0. Suitable pH modifiers and/or buffering agents for use herein include, but are not limited to: ammonia, alkanolamines such as monoethanolamine, diethanolamine, triethanolamine, monopropanolamine, dipropanolamine, tripropanolamine, tripropanolamine, 2-amino-2-methyl-1-propanol, and 2-amino-2-hydroxymethyl-1,3,-propandiol and guanidium salts, alkali metal and ammonium hydroxides and carbonates, preferably sodium hydroxide, sodium silicate, sodium meta silicate and ammonium carbonate, and acidulents such as inorganic and inorganic acids, e.g., phosphoric acid, acetic acid, ascorbic acid, citric acid or tartaric acid, hydrochloric acid, and mixtures thereof.

A composition and/or formulation as described herein may comprise an alkalizing agent. By “alkalizing agent” it is meant one or more compound suitable for raising the pH to alkaline level, in particular to a pH between 9 and 11. Generally, the most commonly used alkalizing agent in the art is ammonia. Non-ammonia alkalizing agents are also known and preferred due to reduced olfactory stimulation. For example, alkanolamines such as monoethanolamine. A composition and/or formulation as described herein may comprise a non-ammonia alkalizing agent selected from the group consisting of: monoethanolamine (MEA), sodium silicate, sodium meta silicate, diethanolamine, triethanolamine, monopropanolamine, dipropanolamine, tripropanolamine, 2-amino-2-methyl-1,3-propanediol, 2-amino-2-methyl-1-propanol (a.k.a. aminomethylpropanol, AMP), 2-amino-2-hydroxymethyl-1,3-propanediol, and mixtures thereof. Monoethanolamine (MEA) or aminomethylpropanol (AMP) are commonly used in ammonia-free hair dye products and may be preferred as the alkalizing agent alone or in combination with each other or other alkalizing agents. Monoethanolamine may be in particular be preferred to be used alone or in combination with other non-ammonia alkalizing agent. A composition and/or formulation as described herein may comprise ammonia in addition to the non-ammonia alkalizing agent, for example less than 0.5% ammonia. In an embodiment, the alkalising agent is monoethanolamine (MEA). In an embodiment, the first and/or second composition comprises the alkalising agent monoethanolamine (MEA) and the oxidative dye compound is 2-methoxymethyl-1,4-benzenediamine.

In an embodiment, the first composition and/or the second composition comprises a surfactant. The first composition and/or the second composition may comprise from about 0.001% to about 10%, or from about 0.1% to about 8%, or from about 0.5% to about 5%, or from about 0.4% to about 2%, or from about 0.8% to about 1.5%, of a surfactant, by total weight of the first composition or the second composition.

The surfactant may be selected from the group consisting of: anionic surfactants, amphoteric surfactants, a zwitterionic surfactants, a cationic surfactants, a non-ionic surfactants, or mixtures thereof. The surfactant is useful for stabilising the hydrophobic phase in the composition, for example stabilising the gel network and/or lamellar structure. In an embodiment, the anionic co-surfactant is sodium lauryl sulfate or sodium laureth sulfate. In an embodiment, the surfactant is a non-ionic surfactant. The non-ionic surfactant may be selected from the group consisting of lanolin alcohol, and polyoxyethylene ethers of fatty alcohols, and mixtures thereof. In an embodiment, the non-ionic surfactant is ceteareth-n, wherein n is from about 2 to about 100, or from about 10 to about 30.

In an embodiment, the first composition and/or the second composition is substantially free of: components capable of forming a neutral complex with the thickener, or a cationic polymer.

The first composition and/or the second composition may be in the form of a cream or an emulsion. In an embodiment, first composition and/or the second composition has a lamellar structure and/or has a gel network. In an embodiment, first composition and/or the second composition comprises micelles comprising the hydrophobic phase.

In an embodiment, the first and/or second composition is obtained from mixing together a colour formulation, a thickening formulation, and a developing formulation. In an embodiment, the first and/or second composition is obtained from mixing together a colour formulation, a thickening formulation, and a developing formulation, wherein the developing formulation comprises an oxidising agent. In an embodiment, the first and/or second composition is obtained from mixing together a colour formulation, a thickening formulation, and a developing formulation, wherein the colour formulation comprises a hair colouring agent, a hydrophobic phase, a hydrophilic phase, and wherein the developing formulation comprises an oxidising agent, and wherein the thickening formulation comprises a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. In an embodiment, the first and/or second composition is obtained from mixing together a colour formulation, and a thickening formulation, wherein the thickening formulation comprises an oxidising agent and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

In an embodiment, the first and/or second composition is obtained from mixing together, at a certain ratio, a colour formulation, a developing formulation, and a thickening formulation. In an embodiment, the weight ratio of the colour formulation to the developing formulation is from about 1:5 to about 5:1. If the colour formulation is part of a three-component mixtures, this weight ratio is also valid. In an embodiment, the weight ratio of the colour formulation to the developing formulation to the thickening formulation (i.e. colour formulation:developing formulation:thickening formulation) is from about 10:10:0.5 to about 10:10:2, or from about 10:20:0.5 to about 10:20:2. In an embodiment, wherein the thickening formulation comprises an oxidising agent, the first and/or second composition is obtained from mixing together, at a certain ratio, a colour formulation, and a thickening formulation. In this embodiment, the weight ratio of the colour formulation to the thickening formulation (i.e. colour formulation:thickening formulation) is from about 10:5 to about 10:25, or from about 10:8 to about 10:22, or from about 10:15 to about 10:20, or from about 10:8 to about 10:12, or from about 10:12 to about 10:18.

The method relates to the formation of a first plurality of coated hair fibre portions. As used herein, a "hair fibre portion" may be an entire fibre of hair from root to tip, alternatively it may relate only to a section of this fibre e.g. only the root section, or only the tip section. A "plurality of hair fibre portions" as used herein, relates to two or more hair fibre portions. Typically a plurality of hair fibre portions relates to a bundle of hair fibre portions, which have been gathered together such they are in close proximity i.e. in a bundle. The respective roots from which the bundle originates may also be in close proximity. For longer hair, however, this may not be the case. A plurality of hair fibre portions may relate to, for example, a bundle of circa 10 entire hair fibres from root to tip. Alternatively, a plurality of hair fibre portions may relate to a bundle of root portions of circa 50 hair fibres. The alternatives in the above description are due to variations in the colouring effects needed in order to create a specific hairstyle. For example, the target final hair effect may require a first hair colouring agent to be applied to circa 50% of the root portions, a second hair colouring agent to be applied to the remaining 50% of the root portions, and a third colouring agent to be applied to 100% of the tip portions.

The term "coated hair fibre portion" as used herein means a section of a hair fibre that has been covered, preferably the majority of its surface area, with a composition

The method comprises the formation of a first plurality of coated hair fibre portions, and subsequently styling the hair, wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions.

"Contacted with" , as used herein, means placing two elements in close proximity such that they touch each other. When, the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions, only parts of the coating on the first plurality of coated hair fibre portions may touch the second plurality of hair fibre portions.

In an embodiment, the first plurality of coated hair fibre portions is formed by applying the first composition to a first plurality of hair fibre portions. In this embodiment, the first composition, comprising a first hair colouring agent and an associative thickener, may be provided, and subsequently appled to the first plurality of hair fibre portions, thus forming the first plurality of coated hair fibre portions.

In another embodiment, the first plurality of coated hair fibre portions is formed by applying a first hair colouring agent to a first plurality of hair fibre portions and subsequently applying an associative thickener to the first plurality of hair fibre portions. This embodiment may be referred to as layering. In another form of 'layering', the first plurality of coated hair fibre portions is formed by applying an associative thickener to a first plurality of hair fibre portions and subsequently applying a first hair colouring agent to the first plurality of hair fibre portions.

In an embodiment of the first aspect, the method comprises:

- the formation of a second plurality of coated hair fibre portions, wherein the coating comprises a second composition, wherein the second composition comprises a second hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently

- contacting the first plurality of coated hair fibre portions with the second plurality of coated hair fibre portions.

In an embodiment, the second hair colouring agent is different from the first hair colouring agent. Consequently, first plurality of coated hair fibre portions comprises a different hair colouring agent from the hair colouring agent comprised in the second plurality of coated hair fibre portions. In an embodiment, the second plurality of coated hair fibre portions is formed by applying a second composition to a second plurality of hair fibre portions. The second plurality of coated hair fibre portions may alternatively be formed by 'layering' as described above.

In an embodiment, the first plurality of hair fibre portions and the second plurality of hair fibre portions do not originate from substantially the same plurality of hair fibre roots.

In an alternative embodiment, the first plurality of hair fibre portions and the second plurality of hair fibre portions originate from substantially the same plurality of hair fibre roots. For example, the same plurality of hair fibre portions may be coated with both the first composition and the second composition. This may mean that the the same plurality of hair fibre portions is dyed with different colours. For example the first plurality of hair fibre portions could be the root portion of the plurality of hair fibres, and this root portion could be coated with the first composition comprising the first hair colouring agent and an associative thickener, and the second plurality of hair fibre portions could be the remaining portion of the plurality of hair fibres including the tip portion, and this remaining portion could be coated with the second composition comprising the second hair colouring agent and an associative thickener.

In an embodiment, the first plurality of coated hair fibre portions is formed by applying the first composition to a first plurality of hair fibre portions, and subsequently applying a second composition to the first plurality of coated hair fibre portions, wherein the second composition comprises a second hair colouring agent and an associative thickener. In this embodiment, substantially the same plurality of coated hair fibre portions is coated with both the first composition and the second composition. In this embodiment, the first composition and the second composition may be blended together on the hair fibre portions.

In an embodiment, a first, a second, a third and a fourth plurality of coated hair fibre portions are formed, wherein the coating comprises a composition comprising a hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. In an embodiment, the composition for each coating comprises two or more different hair colouring agents, wherein the hair colouring agents may result in a different final colour result.

In an embodiment, the plurality of coated hair fibre portions are laid flat onto the head. In an embodiment, the plurality of coated hair fibre portions are in slice-shaped form. In an embodiment, the first plurality of coated hair fibre portions is sculpted to form a curl.

"Substantially the same", as used herein, means at least 50% the same, or more than 60% the same, or more than 70% the same, or more than 80% the same, or more than 90% the same, or more than 95% the same.

In an embodiment, the method results in a hairstyle and wherein the hairstyle is selected from the group consisting of: turban; plait; braid; tousel; wave; criss-cross; blending; 2-step; sculpting; and combinations thereof.

In an embodiment, prior to the formation of the second plurality of coated hair fibre portions, first plurality of hair fibre portions is styled to form a hairstyle. In an embodiment, subsequent to the formation of the second plurality of coated hair fibre portions, the second plurality of coated hair fibre portions is styled to form a hairstyle.

In an embodiment, the first hair colouring agent (and second hair colouring agent, when applied) is allowed to remain on the hair for a development time. The development time may be from about 1 min to about 90 min, or from about 5 min to about 70 min, or from about 10 min to about 60 min, or from about 10 min to about 40 min.

In an embodiment, prior to the formation of the second plurality of coated hair fibre portions, the hair is treated with a treatment. The treatment may selected from the group consisting of the exposure of the hair: to a temperature of 20°C to 45°C for at least 0.5 min, or at least 1 min, or at least 3 min, or at least 5 min; to a relative humidity of 20% to 80% for at least 0.5 min, or at least 1 min, or at least 3 min, or at least 5 min; and combinations thereof.

In an embodiment of the method, after application of the first composition and, when applied, after application of the second composition, the composition(s) are subsequently rinsed from the hair.

Following hair rinsing, the hair displays a hair colour effect. The hair colour effect may be selected from the group consisting of: highlighting, lowlighting, and combinations thereof.

The method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions. "Solid barrier means to separate", as used herein, means that a solid substance is placed on the hair, such that portions of the hair are not able to touch each other. Foils are an example of solid barrier means, which are typically used such that portions of hair are individually wrapped in foil. Another example of a solid barrier means is a cap comprising holes. Such a cap is described, in particular in Figure 2 and in paragraph 0004 on page 2, in European patent application EP1969961A2, filed on 10th March 2008 in the name of the Procter and Gamble Company and published on 17th Sept 2008.

In an embodiment, the solid barrier means is a physical barrier selected from the group consisting of foil, plastic, film, cotton wool, padding material, caps, and combinations thereof.

In an embodiment, the method comprises the application of a liquid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions. The liquid barrier means may be a conditioning formulation.

In another embodiment, method does not comprise the application of any barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions. Any barrier means comprises liquid barrier means and solid barrier means.

An embodiment of the first aspect relates to a method for colouring hair, wherein the method comprises:

(i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently

(ii) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently

(iii) optionally, the formation of a third, optionally also a fourth, optionally also a fifth, optionally also a sixth plurality of coated hair fibre portions, wherein each coating comprises a composition, wherein the composition comprises a hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently

(iv) styling the hair wherein the pluralities of coated hair fibre portions are contacted with one another;

wherein the method does not comprise the application of a solid barrier means in order to separate the pluralities of coated hair fibre portions from each other.

An alternative method that does not fall within the scope of the first aspect, as described herein, relates to method for colouring hair, wherein the method comprises:

(i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition comprising a first hair colouring agent and an associative thickener; and subsequently

(ii) styling the hair wherein the first plurality of coated hair fibre portions is not substantially contacted with a second plurality of hair fibre portions;

and wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

In an embodiment of this alternative method, the first plurality of coated hair fibre portions may be styled to form spikes and/or knots. This alternative method is particularly suited to shorter hair. In an embodiment, the method comprises subsequent to the formation of the first plurality of coated hair fibre portions, the formation of a second plurality of coated hair fibre portions, wherein the coating on the second plurality of coated hair fibre portions comprises a second composition comprising a second hair colouring agent and an associative thickener. In an embodiment, the second plurality of coated hair fibre portions may be styled to form spikes and/or knots.

“Not substantially contacted with”, as used herein, means that not purposefully placing two elements in close proximity such that they touch each other or not allowing two elements to be in close proximity such that they touch each other. In an embodiment of this alternative method when the first plurality of coated hair fibre portions is not substantially contacted with a second plurality of hair fibre portions, the first plurality of hair fibre portions ideally does not touch the second plurality of hair fibre portions. However, small and insignificant parts of the first plurality of hair fibre portions may touch the second plurality of hair fibre portions.

According to the second aspect, the present invention relates to a composition for colouring hair comprising hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the composition has a storage modulus of at least about 3000 Pa, at least about 3300 Pa, or at least about 3500 Pa, or at least about 4000 Pa, or at least about 4500 Pa, or at least about 5000 Pa, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C.

An alternative embodiment of the second aspect relates to a composition for colouring hair comprising a hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the composition has a tangent delta of about 0.68 or less, alternatively about 0.66 or less, alternatively about 0.65 or less, alternatively about 0.64 or less, alternatively about 0.63 or less, alternatively about 0.62 or less, alternatively about 0.61 or less, alternatively about 0.60 or less, alternatively about 0.58 or less, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C. In an embodiment, the composition for colouring hair comprises a hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the composition has a tangent delta of about 0.68 or less, alternatively about 0.66 or less, alternatively about 0.65 or less, alternatively about 0.64 or less, alternatively about 0.63 or less, alternatively about 0.62 or less, alternatively about 0.61 or less, alternatively about 0.60 or less, alternatively about 0.58 or less, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C, and wherein the composition also has a storage modulus of at least about 3000 Pa, at least about 3300 Pa, or at least about 3500 Pa, or at least about 4000 Pa, or at least about 4500 Pa, or at least about 5000 Pa, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C.

The details disclosed above in relation to the first and/or second composition of the first aspect, also apply to the second aspect.

According to the third aspect, the present invention relates to the use of the composition according to the second aspect, for colouring and/or styling hair.

According to the fourth aspect, the present invention relates to a kit comprising:

(a) application instructions;
(b) a composition.

In an embodiment, the kit comprises:

(a) application instructions comprising the method according to the first aspect;
(b) the first composition.

In an embodiment, the kit further comprises the second composition, which is packaged separately from the first composition. Another embodiment relates to a kit comprising:

(a) application instructions comprising the method according to the first aspect;
(b) a product comprising the first composition;
(c) a product comprising the second composition.

Another embodiment of the fourth aspect relates to a kit, wherein the kit further comprises one or more of the following:

(d) an implement;
(e) a device.

According to the fifth aspect, the present invention relates to a process for creating a composition for colouring hair comprising mixing:

- a hair colouring agent,
- a hydrophobic phase,
- a hydrophilic phase,
- a surfactant,
- and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

According to another aspect, the present invention may further relate to an article of commerce comprising at least one composition or formulation as described herein, or a plurality thereof, and a communication pertaining to the composition and/or formulation. The communication may be printed material attached directly or indirectly to packaging containing at least one composition and/or formulation pursuant to the present invention. Alternatively, the communication may be an electronic or a broadcast message that is associated with a hairstyling device and/or the composition and/or formulation. The communication may comprise images comparing the appearance of a person prior to use of the composition and/or formulation to the appearance of the same person after using the composition and/or formulation.

According to a further aspect, the present invention comprises a method of marketing a kit comprising the first composition and the second composition as described herein, wherein the method of marketing comprises the step of making available to a consumer the kit, and providing a communication to the consumer that the compositions may provide one or more benefits to the hair as described herein.

EXAMPLES

The following examples are colour formulations, developing formulations and thickening formulations for obtaining first and/or second compositions as described herein.

Colour formulations A to P

Colour Formulation	Colour result	Hair colouring agent	Dye and salt load	Alkalising agent	Other components (stated percentages are by total weight of the colour formulation)
A	black	Oxidative dye compounds	highest dye load, high electrolyte	low ammonia and MEA	Hydrophobic phase comprising hydrophobic components (20% to 28%); hydrophilic phase comprising water (50% to 76%); surfactant (4% to 6%); and alkalising agent(s) (3% to 11 %).
B	neutral dark brown	Oxidative dye compounds	medium high dye load	medium low ammonia	
C	neutral light blond	Oxidative dye compounds	low dye load	high ammonia	
D	light brown e.g. hazelnut	Oxidative dye compounds	medium dye load	medium ammonia	
E	intense red shade	Oxidative dye compounds	high concentration of the dye pyrazole	high ammonia	
F	intense red shade	Oxidative dye compounds	low concentration of the dye pyrazole	high ammonia	
G	gold blond	Mixture of oxidative dye	low dye load	high ammonia	

		compounds and direct dyes			
H	intense red shade	Direct dyes	high dye load	-	Hydrophilic phase, surfactant
I	gold shade	Direct dyes	low dye load	-	
J	Any of colour formulations A to G	Oxidative dye compounds	As per selected colour formulations A to G	3% to 11% ammonia	Hydrophobic phase comprising hydrophobic components (8 to 10%); hydrophilic phase comprising water (75 to 90%); surfactant (2% to 3%).
K	Any of colour formulations A to G	Oxidative dye compounds	As per selected colour formulations A to G	3% to 11% ammonia	Hydrophobic phase comprising hydrophobic components (2 to 10%); hydrophilic phase comprising water (75 to 95%); surfactant (1% to 3%).
L	Any of colour formulations A to G	Oxidative dye compounds	As per selected colour formulations A to G	4 to 8% MEA	Hydrophobic phase comprising hydrophobic components (8 to 12%); hydrophilic phase comprising water (70 to 85%); surfactant (6% to 8%).

M	Optionally any of colour formulations A to G	Persulfate and optionally oxidative dye compounds	Optionally as per selected colour formulations A to G.	Up to 2 % ammonia	Powder.
N	Any of colour formulations A to G	Oxidative dye compounds	As per selected colour formulations A to G	3% to 11% ammonia	Hydrophobic phase comprising hydrophobic components (30 to 45%); hydrophilic phase comprising water (40 to 64%); surfactant (6% to 15%).
O	Any of colour formulations H to I	Oxidative dye compounds	As per selected colour formulations H to I	-	Hydrophobic phase comprising hydrophobic components (30 to 45%); hydrophilic phase comprising water (40 to 65%); surfactant (6% to 15%).
P	Any of colour formulations G	Mixture of oxidative dye compounds and direct dyes	As per colour formulation G	MEA	Hydrophobic phase comprising hydrophobic components (30 to 45%); hydrophilic phase comprising water (40 to 65%); surfactant (6% to 15%).

Developing Formulations I to V

Developing Formulation	Concentration of oxidising agent	Other components (stated percentages are by total weight of the colour formulation)
I	1%	Hydrophobic phase comprising cetearyl alcohol (2% to 6 %); surfactant (0.6% to 0.8%) ; hydrophilic phase comprising water (93% to 97%)
II	4%	
III	6%	
IV	9%	
V	12%	

Thickening Formulations 1 to 6

Component	1	2	3	4	5	6
ViscUP® EZ [1]	-	-	-	100	-	-
Structure® 3001 [2]	5.45	-	-	-	60	60
Luvigel Star [3]	-	90	-	-	-	-
Aculyn 28 [4]	-	-	90	-	-	-
Hydrogen peroxide (50%)	12	-	-	-	-	1
1,2 Propylene Glycol	-	-	-	-	-	2
Cetearyl Alcohol	3.4	-	-	-	-	-
Cremophor A 25 [5]	0.80	-	-	-	-	-
Salicylic Acid USP	0.10	-	-	-	-	-
Disodium Phosphate	0.08	-	-	-	-	-
Phoshoric Acid	0.095	-	-	-	-	-

Etidronic Acid (60%)	0.01	-	-	-	-	-
Methylparapen	-	-	-	-	-	0.2
Benzyl Alcohol	-	0.4	0.4	-	0.4	0.4
PEG Hydrogenated Castor Oil	-	0.3	0.3	-	0.3	-
Phenoxyethanol	-	0.2	0.2	-	0.2	-
Water	QSP	QSP	QSP	-	QSP	QSP
Total	100	100	100	100	100	100

KEY: ^{1} = comprises 45% active being a Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymer, Hydrogenated Polydecene, Sorbitan Laurate, and Trideceth-6, and is available from Arch Personal Care Products; ^{2} = comprises 30% active being Acrylates/Ceteth-20 Itaconate Copolymer from AkzoNobel; ^{3} = comprises 20% active being Polyurethane-39 from BASF; ^{4} = comprises 20% active being Acrylates/Beheneth-25 Methacrylate Copolymer from Rohm & Haas; ^{5} = ceteareth-25 (inci name), PEG-25 Cetylstearylether (chemical name).

A selected colour formulation, selected developing formulation and selected thickening formulations are mixed together for obtaining first and/or second compositions as described herein. A hairstyle may then be created.

Hairstyle: Turban

Compositions pursuant to the present invention suitable for the turban hairstyle include, for example, a composition comprising a colour formulation D, developing formulation III, and thickening formulation 5; combined with a composition comprising colour formulation G, developing formulation IV, and thickening formulation 5; and combined with a composition comprising colour formulation C, developing formulation IV, and thickening formulation 5. Other thickening formulations may be used.

Method: Start applying the composition(s) on the top of the head downwards to the neck, finally the front of the head. The size of the plurality of hair fibre portions and application of the first, second or further compositions can vary as preferred/required. Apply the composition on the roots, lengths and ends directly and build a turban (see Figures 37, 38, 41). A plurality of hair fibre portions in this case is a plurality of hair fibres from root to tip originating from substantially the same roots. Each plurality of hair fibre portions can be applied with a different composition e.g. with a different resulting hair colour. Lie the plurality of hair fibre portions, depending on hair length, substantially flat on the top or on the back of the head. The hair is left for a development time suitable for the compositions chosen.

Hairstyle: Blending

Compositions pursuant to the present invention suitable for the blending hairstyle include, for example, a composition comprising a colour formulation B, developing formulation III, and thickening formulation 5; combined with a composition comprising colour formulation E, developing formulation III, and thickening formulation 5. Other thickening formulations may be used.

Method: A plurality of hair fibre portions in this case is a not a plurality of hair fibres from root to tip, but instead only a portion thereof e.g. the root portion, or the tip portion. Coloring the roots: Start colouring the roots on the top of the head downwards to the neck and finally the front of the head. Use thin pluralities of hair fibre portions and apply composition on the roots but only on a portion most proximal to the scalp. The extend of the portion proximal to the scalp should be decided upon i.e. how many cm of the roots to colour, e.g. 1 cm to 10 cm. Coloring lengths and ends: Now apply the composition on the lengths and ends directly afterwards - above and below. Apply the composition also onto the already coloured roots. Comb the plurality of hair fibre portions through to get a nice colour flow from root to tips. The blending hairstyle is shown in Figure 47.

Hairstyle: Criss-cross

Compositions pursuant to the present invention suitable for the criss-cross hairstyle include, for example, a composition comprising a colour formulation G, developing formulation IV, and thickening formulation 5; combined with a composition comprising colour formulation D, developing formulation III, and thickening formulation 5; and combined with a composition comprising colour formulation C, developing formulation IV, and thickening formulation 5. Other thickening formulations may also be used.

Method: Start the colouring process at the neck and continue upwards to the top of the head. The plurality of hair fibre portions should be slice-like in shape and these slices should have a thickness of about 0.5 cm to 1 cm, as they are applied diagonally like as triangle. The compositions are applied from root to tip immediately, slice by slice. Each slice can become coated in a different composition according to the present invention, particularly differing by hair colouring agent, more preferably differing by resulting hair colour. All coloured slices lie over each other backwards, without additional pressure. The cross-cross hairstyle is shown in Figures 42 and 45. Development time is normally about 30 min without application of heat i.e. at room temperature.

Hairstyle: 2-step

Compositions pursuant to the present invention suitable for the 2-step hairstyle include, for example, a composition comprising a colour formulation E, developing formulation III, and thickening formulation 5; and combined with a formula comprising colour formulation M, developing formulation III. Other thickening formulations may be used.

Method: A first composition is applied to the whole head of hair i.e. the plurality of hair fibre portions is the entire head of hair. However, selected pluralities of hair fibre portions then receive a second composition applied on top of the first composition. The 2-step may be leveraged to apply highlights (a second composition or a second formula) on a formed hair shape created after styling the hair following application of the first composition. For example, curls can be created using the sculptability of the first composition, and then the second composition is applied onto the outer surface of the curl. Using the first composition, start application on the top of the head downwards to the neck, finally the front of the head. Afterwards create some sculpted constructs using creativity, e.g. a water wave, a twister, a braid the hair. Choose a brush or special applicator to apply the second composition, e.g. a thin brush. Start applying the second composition on the “constructs” as desired. The 2-step hairstyle is shown in Figure 46.

DATA

Experiment 1 – Rheology measurements

In this experiment, different compositions pursuant to the present invention, which differed in the specific thickener used, were compared with a compositions not pursuant to the present invention. The the flow properties in steady state shear and time-dependent viscoelastic properties in the linear viscoelastic region with a frequency sweep were measured and compared.

Apparatus: Analytical balance, top loading, precision 0.01g (Mettler) or equivalent; Applicator brush and bowl or equivalent; Stopwatch capable of measuring 5 min to 1 s display; Advanced Rheometer (TA-Instruments AR2000 or AR2000ex) or equivalent.

Sample Preparation: Place the bowl on the balance, tare and add 30 g (±1 g) of Tint. Record the weight, tare again and add the same amount of developer (±0.1 g). Using the brush, mix the sample for 10 seconds. Tare the balance again and add 3 g of thickener and mix for 1 Minute. Let the mixture develop for 4 minutes and then load it onto the Rheometer.

Frequency sweep: The composition is placed between two rheometer plates and an oscillatory shear stress is applied resulting in an oscillatory strain response of 0.05%, while the angular frequency is increased stepwise from 0.1 rad/s to 10 rad/s. The relationship between the sinusoidal stress applied and the resulting strain response as well as the shift between both measures on the time axis are monitored.

Frequency sweep: 40 mm flat acrylic plate; Peltier plate; Geometry Gap: 1000μm; Temperature: 23; Conditioning in the instrument: 60 s.

Reporting results: For the frequency sweep the storage modulus [G'], loss modulus [G''], loss factor [tan δ] are reported.

Experiment 1 – Compositions tested

The following compositions were tested in Experiment 1.

Compo-sition	Colour Formulation*	Developing Formulation*	Thickening Formulation*	Mixing ratio (by weight) as Colour Formulation:Developing Formulation: Thickening Formulation	Amount of thickener# in composition
A	A	III	-	10:10:0	-
C	A	III	5	10:10:1	0.86
E	A	III	2	10:10:1	0.86
D	A	III	3	10:10:1	0.86
B	A	III	4	10:10:0.83	1.78
F	C	V	-	10:10:0	-
H	C	V	5	10:10:1	0.86
J	C	V	2	10:10:1	0.86
I	C	V	3	10:10:1	0.86
G	C	V	4	10:10:0.83	1.78

* = see Examples section above; # = thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

Compositions A and F are not pursuant to the present invention because they do not comprise a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. Consequently, compositions A and F are control compositions.

Experiment 1 – Results

The results of the rheology experiments are shown in Figures 29 to 36. Conclusions from experiment 1 include that significant differences were found between the compositions pursuant to the present invention and the comparative compositions A and F. The data was also found to be highly reliable with a low standard deviation. The storage modulus relates to the elastic resistance of the composition against deformation and the loss factor the level of elasticity the composition possesses. These measurements substantiate the superior 'hold' demonstrated by the compositions pursuant to the present invention.

Experiment 2 – Long-lasting hold evaluation

The same compositions as used for experiment 1 were used to evaluate hold strength afforded by the compositions according to the present invention. As in experiment 1 compositions A and F are not pursuant to the present invention because they do not comprise a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase. Consequently, compositions A and F are control compositions. The long lasting hold measurements are observations of the height changes of hair tresses over time at elevated humidity (20°C and a humidity of 65% relative humidity). These methods are performed in order to determine the form stability i.e. the amount of hold, of hair tresses treated with the compositions pursuant to the present invention. With a height calliper comprising a laser, the height changes of tresses are detected, which indicate the amount of hold provided by the compositions pursuant to the present invention. The following method was used:

Treatment with each composition: A total of at least 20 g of each composition A to G is thoroughly mixed using a colour brush or in an applicator flask. 5 dry tresses with a length of 170 mm and a dry weight of 2.00 g to 2.02 g are put on a Plexiglas plate. The composition is applied to the tresses. The composition is dispersed equally on the hair tress using a brush such that the hairs of the tress are kept brushed straight and parallel. The final weight of each tress is 6.20 g to 6.23 g.

Measurement procedure: The tresses each have a rubber gatherer at one end, and these rubber ends of the treated tresses are mounted horizontally on a rack. 55 mm infront of the rack is a narrow bar which is parallel and at the same height above the bench as the rack. Each tress lies horizontally from the rack to narrow bar. After the narrow bar a protruding length of 102 mm for each tress is left over. A wet tress (comprising 50% humidity, which would reflect towel dry hair) hangs down loosely from the narrow bar. The composition applied to the tresses provide stiffness (i.e. hold) to the protruding length of the tresses such that they do not hang down loosely from the narrow bar. The extent to which the protruding length of the tress is held is measured by measuring the height of the tip of the tress. The height projection of the tip end of the tress is determined by means of an altimeter with semiconductor laser immediate. The measurement is taken after after 0 min, 10 min, and 30 min. Taking the length of the tress into account the resulting hold is calculated as follows:

$$\text{hold [\%]} = 100 - ((l_t/102) \times 100)$$

l_t = height of horizontally projected tress.

102 mm = protruding length of the tress.

A tress that remained horizontal would have an l_t of 0 mm, and therefore a percentage hold of 100% i.e. this would be the best possible result. A wet tress that hangs down loosely would have an l_t of 102 mm, and therefore a percentage hold of 0% i.e. this would be the worst possible result.

The results of the hold evaluation are shown below. Each hold value is a mean of 5 repeats, since for every composition 5 tresses were utilised.

Compo-sition*	Hold after 0 mins	Hold after 10 mins	Hold after 30 mins
A	9.86	8.00	7.85
C	16.85	13.16	10.97
E	15.77	10.80	9.25
D	27.16	13.71	11.24
B	17.41	12.50	10.61
F	6.67	5.90	5.24
H	12.85	8.30	7.07
J	9.72	5.83	5.14
I	17.68	9.93	8.35
G	13.73	9.24	7.64

[*] = see compositions tested in experiment 1.

Conclusions: The results for compositions A, B, C, D, and E can be compared with each over because the colour formulation used was the same. Compositions B to E provided a better hold than composition A. The results for compositions F to J can be compared with each over because the colour formulation used was the same. Compositions H to J provided a better hold than composition F. These data are relevant to stylists work. For example, the 0 min measurement is most relevant to the stylist's work because this occurs during the application phase i.e. when the composition is applied to the head of hair. Consequently these data are very realistic. The 10 min and 30 min measurements relate more to the development phase.

Experiment 3 – Colour migration experiment

The colour migration experiment is an examination of the migration behaviour of colouring agents comprised in compositions pursuant and not pursuant to the present invention. For each experiment, a first composition is chosen, which comprises a first hair colouring agent, and a second composition is chosen, which comprises a second hair colouring agent being different to the first hair colouring agent. In order to achieve the boundary layer for the examination, the two compositions are applied immediately after mixing onto a microscope slide. After the desired development time the boundary layer between the two masses is visualized by using a digital camera system with macroscopic lens equipment. For avoiding gloss due to illumination an integrating sphere with cold light source is used. After image capturing regions of interests (ROI) in the appropriate colour channel (R,G,B) around the boundary layer are defined for the calculation. Line profiles perpendicular to the layer with defined thickness of the ROIs are generated with image analysis software and can be used for calculating or visualizing the colour migration behavior. Line profiles are detecting the intensity value for each pixel over the entire length; thus the analysis of the gradient at the "layer zone" gives the information about the colour migration: the steeper the gradient between the average level of each colour, the less the colour migration from the first composition into the second composition.

The results of the colour migration experiments are shown in Figures 1 to 28. Figures 1 to 20 show the photographs taken and then figures 21 to 28 show the graphical analyses of these photographs. The graphical analyses (i.e. quantitative data) show the steepness of the gradient at the boundary layer, which correlates with lack of colour migration. Figures 17 to 20 and 27 and 28 show compositions not pursuant to the invention.

Conclusions from experiment 3 include: the results shown in Figures 17 to 20 and 27 and 28 are significantly and clearly different from the results shown in Figures 1 to 6 and 21 to 26.

These data support the benefit provided by the present invention in that solid barrier means are not required.

Experiment 4 – Stylist assessments of doll heads

Four compositions pursuant to the present invention were provided. The colour formulations were colour formulations E, B, G and D. All four compositions were obtained by mixing developing formulation III and thickening formulation 5. All colour formulations comprised oxidative dye compounds. The mixing ratios of colour formulation:developing formulation:thickening formulation were 10:10:1. The criss-cross hairstyle was created on doll heads. On one half side of each doll head, a criss-cross hairstyle was created using a composition comprising colour formulation E (intense red), developing formulation III and thickening formulation 5; and a composition comprising colour formulation B (neutral dark brown), developing formulation III and thickening formulation 5. On the other side, a criss-cross hairstyle was created using a composition comprising colour formulation G (gold blond), developing formulation III and thickening formulation 5; and a composition comprising colour formulation D (light brown), developing formulation III and thickening formulation 5. A total of 3 doll heads were employed, each doll head was treated by a different stylist (i.e. a total of 3 stylists). The stylists who treated the doll heads, evaluatued their experience during application and development time for below criteria.

Criteria	Rating of 10	Rating of 7 or more	Rating between 6.9 and 4.1	Rating of 4 or less	Rating of 0
Sculptability during application	Easy	excellent-good	good-acceptable	unacceptable	difficult
Hold during application	Strong	excellent-good	good-acceptable	unacceptable	weak
Ability to execute freehand application	Very safe feeling	excellent-good	good-acceptable	unacceptable	Unsafe feeling

Hold during development time	Strong	excellent-good	good-acceptable	unacceptable	Weak
Stability of hair with applied color	Lasts complete development time	excellent-good	good-acceptable	unacceptable	Hair style collapses immediately

In addition, after washing out the compositions and drying the hair, the results of the hair colouring were assessed by a total of 11 stylists for each half side of each doll head. 1 of the 10 stylists was the executor of the doll head colouring. The remaining 10 were blind assessors. Each stylist gave the doll head result a rating based on the below table.

Criteria	Rating of 10	Rating of 7 or more	Rating between 6.9 and 4.1	Rating of 4 or less	Rating of 0
Colour separation (overall rating)	Excellent separation overall	excellent-good	good-acceptable	unacceptable	No colour separation at all
Color separation (specific)	Excellent effect: true to tone of single hair fibre portion	excellent-good	good-acceptable	unacceptable	Base colour has completely changed (e.g. blond is now rose)
Colour spots	No spots at all	excellent-good	good-acceptable	unacceptable	Spots on all hair fibre portions

The results of experiment 4 are shown in the following table.

Criteria	Base Size of Stylist	Overall Mean Rating	Base Size for Red-Brown	Average Rating for Red-Brown	Base Size for Blond-Brown	Average Rating for Blond-Brown
Sculptability during application	6	7.00	3	6.67	3	7.33
Hold during application	6	6.67	3	6.33	3	7.00
Ability to execute freehand application	6	6.83	3	6.67	3	7.00
Hold during development time	6	8.17	3	8.00	3	8.33
Stability of hair with applied color	6	9.58	3	9.50	3	9.67
Colour separation (overall rating)	66	7.86	33	7.99	33	7.73
Color separation (specific)	66	7.59	33	7.79	33	7.39
Colour spots	66	7.43	33	7.70	33	7.15

Conclusions from experiment 4: The stylists rated the effect of the compositions pursuant to the present invention consistently overall as good to excellent.

Experiment 5 – Stylist assessments of live models

A composition pursuant to the present invention and as detailed in the following table was prepared. The compositions as described herein were applied onto real heads of hair. The colour formulation (comprising a hair colouring agent) utilised to create the composition differed depending on the hairstyle to be created. A wide variety of hair colouring agents were chosen. The thickener chosen was thickening formulation 5 (see example section). The 1x blending hairstyle, 6x turban hairstyle and 1x painting hairstyle were created by stylists. After rinsing out the compositions from the hair and drying the hair, the stylists evaluated the colour result according to the below 5 point scale.

Stylist rating	Meaning	Score
- -	no effect at all	0
-	slight effect	25
- / +	medium good	50
+	good effect	75
+ +	excellent effect	100

Results

Criteria	Mean Score	Base size stylists	Base size models
Color Separation	82	38	8
Color Spots	80.5	34	7
Hold	84	8	7
Color Flow	70	5	1

Conclusions from experiment 3 include: Excellent results were obtained for both the hairstyle created pursuant to the method described herein and also for the hair effects resulting from the method described herein.

The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as “40 mm” is intended to mean “about 40 mm.”

CLAIMS

What is claimed is:

1. A method for colouring hair, wherein the method comprises:
    (i) the formation of a first plurality of coated hair fibre portions, wherein the coating comprises a first composition, wherein the first composition comprises a first hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently
    (ii) styling the hair wherein the first plurality of coated hair fibre portions is contacted with a second plurality of hair fibre portions;

    wherein the method does not comprise the application of a solid barrier means in order to separate the first plurality of coated hair fibre portions from the second plurality of hair fibre portions.

2. The method according to claim 1, wherein the solid barrier means is a physical barrier selected from the group consisting of foil, plastic, film, cotton wool, padding material, caps, and combinations thereof.

3. The method according to any preceding claim, wherein the first plurality of coated hair fibre portions is formed by applying the first composition to a first plurality of hair fibre portions.

4. The method according to any preceding claim, comprising:
    - the formation of a second plurality of coated hair fibre portions, wherein the coating comprises a second composition, wherein the second composition comprises a second hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase; and subsequently
    - contacting the first plurality of coated hair fibre portions with the second plurality of coated hair fibre portions.

5. The method according to claim 4, wherein the second hair colouring agent is different from the first hair colouring agent.

6. The method according to any preceding claim, wherein the first and/or second composition is obtained from mixing together a colour formulation, a thickening formulation, and a developing formulation.

7. The method according to any preceding claim, wherein the first and/or second composition comprises an oxidative dye compound and an oxidising agent.

8. The method according to any of claims 4 to 7, wherein the first composition comprises a first hair colouring agent and the second composition comprises a second hair colouring agent.

9. The method according to any preceding claim, wherein the thickener is an associative thickening polymer and wherein the associative thickening polymer comprises a hydrophilic backbone substituted with at least one hydrophobic sidechain.

10. The method according to claim 9, wherein the associative thickening polymer is substituted with a hydrophobic sidechain comprising at least 10 carbon atoms, or from 10 to 30 carbon atoms.

11. The method according to any of claims 9 to 10, wherein the associative thickening polymer is an acrylates/ceteth-20 itaconate copolymer.

12. The method according to any preceding claim, wherein the surfactant is a non-ionic surfactant.

13. A a composition for colouring hair comprising hair colouring agent, a hydrophobic phase, a hydrophilic phase, a surfactant, and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase, wherein the composition has a storage modulus of at least about 3000 Pa, at least about 3300 Pa, or at least about 3500 Pa, or at least about 4000 Pa, or at least about 4500 Pa, or at least about 5000 Pa, measured by frequency sweep at an angular frequency of 0.6 rad/s at 23°C.

14. Use of a the composition according to claim 13, for colouring and/or styling hair.

15. A process for creating a composition for colouring hair comprising mixing:
    - a hair colouring agent,
    - a hydrophobic phase,
    - a hydrophilic phase,
    - a surfactant,
    - and a thickener capable of interacting with the hydrophobic phase and the hydrophilic phase.

Application number / Numéro de demande: 2789593

Figures:

Pages: 1/47 TO 28/47 and
37/47 TO 47/47

Unscannable items received with this application
(Request original documents in File Prep. Section on the 10th floor)

Documents reçu avec cette demande ne pouvant être balayés
(Commander les documents originaux dans la section de la préparation
des dossiers au 10ième étage)

FIG. 29

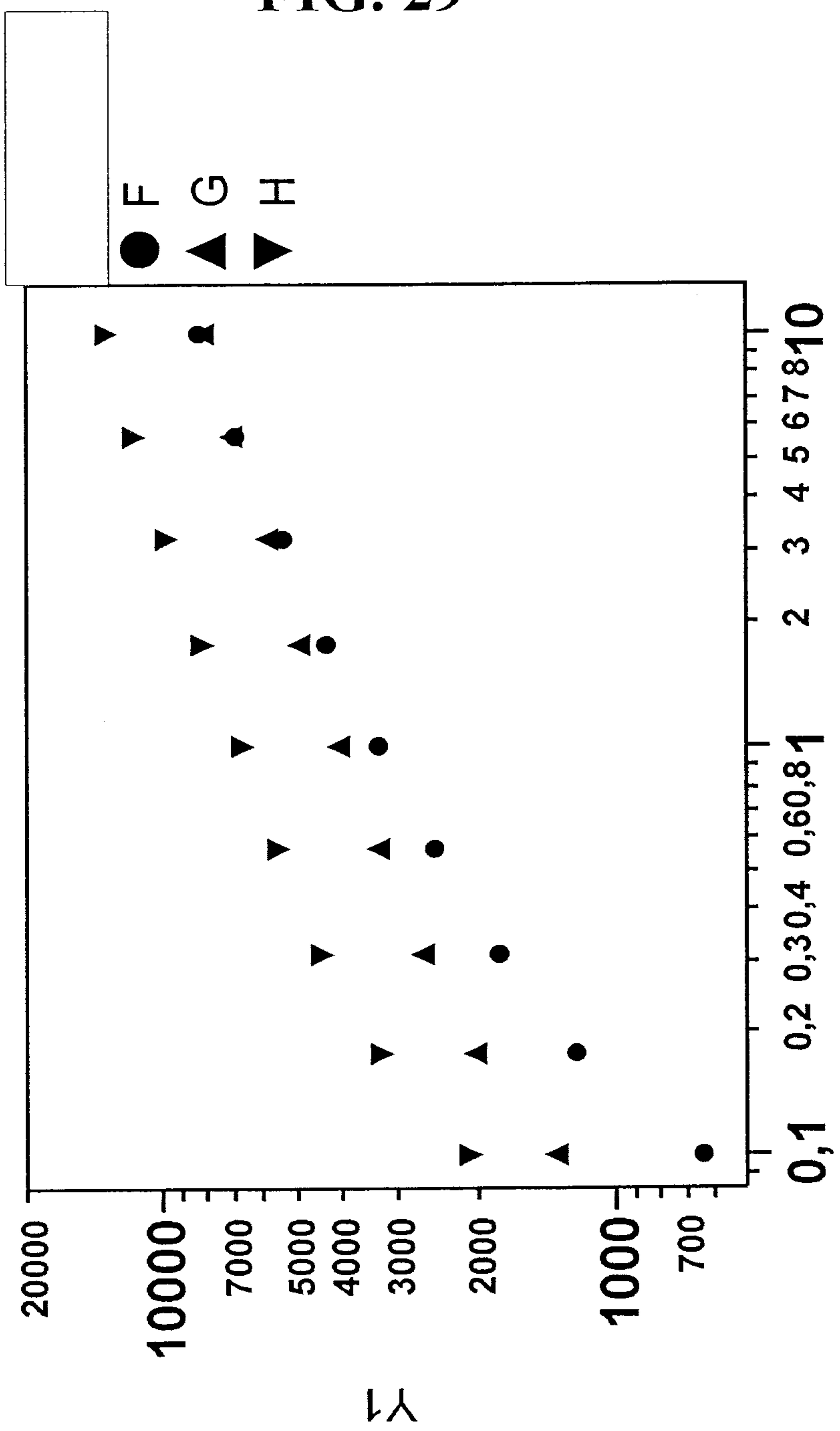
● F
▲ G
▼ H
Y1
20000
10000
7000
5000
4000
3000
2000
1000
700
X1
0,1
0,2
0,3
0,4
0,6
0,8
1
2
3
4
5
6
7
8
10

FIG. 30

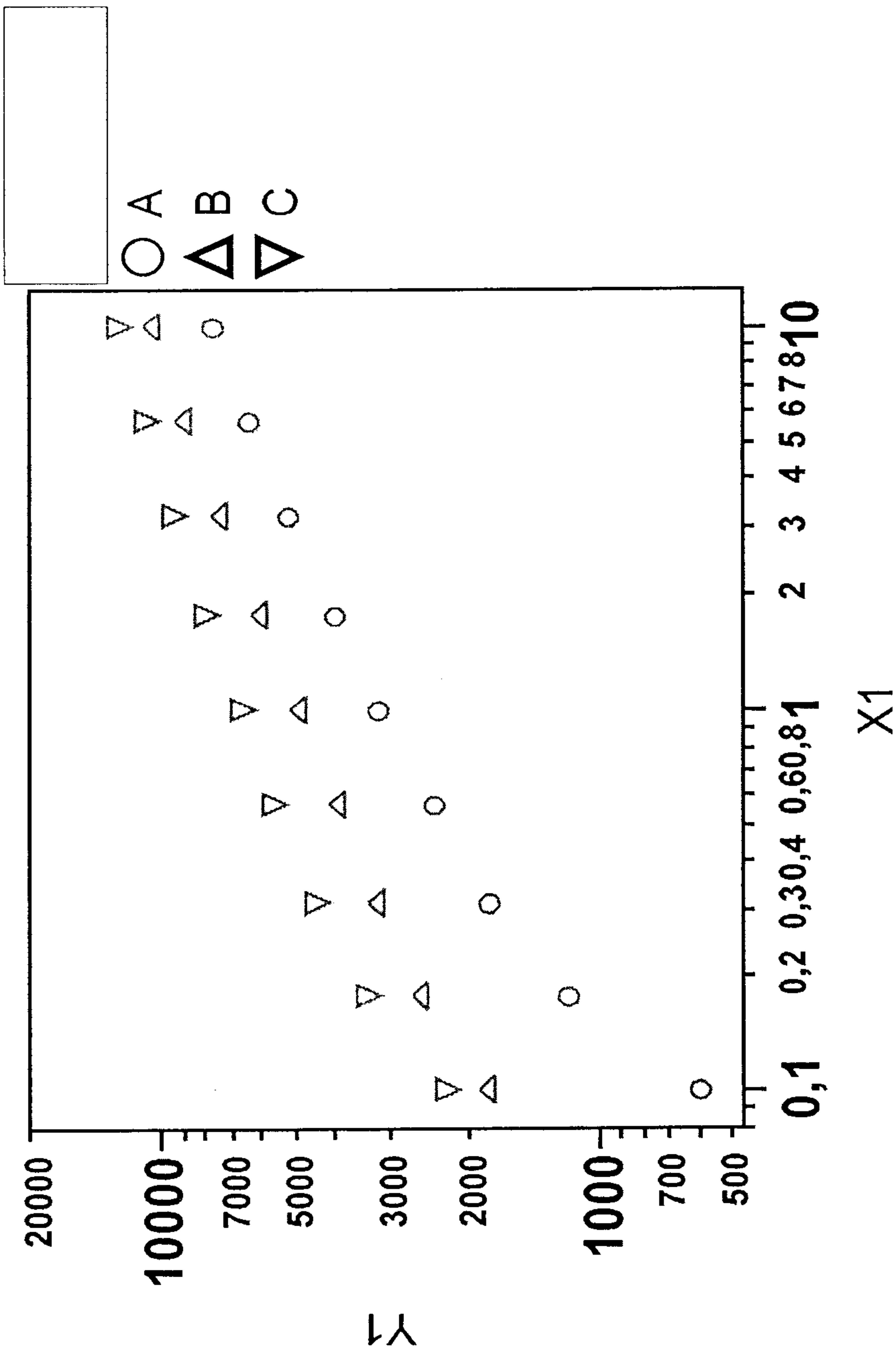
○ A
◁ B
▷ C
Y1
20000
10000
7000
5000
3000
2000
1000
700
500
X1
0,1
0,2
0,3
0,4
0,6
0,8
1
2
3
4
5
6
7
8
10

FIG. 31

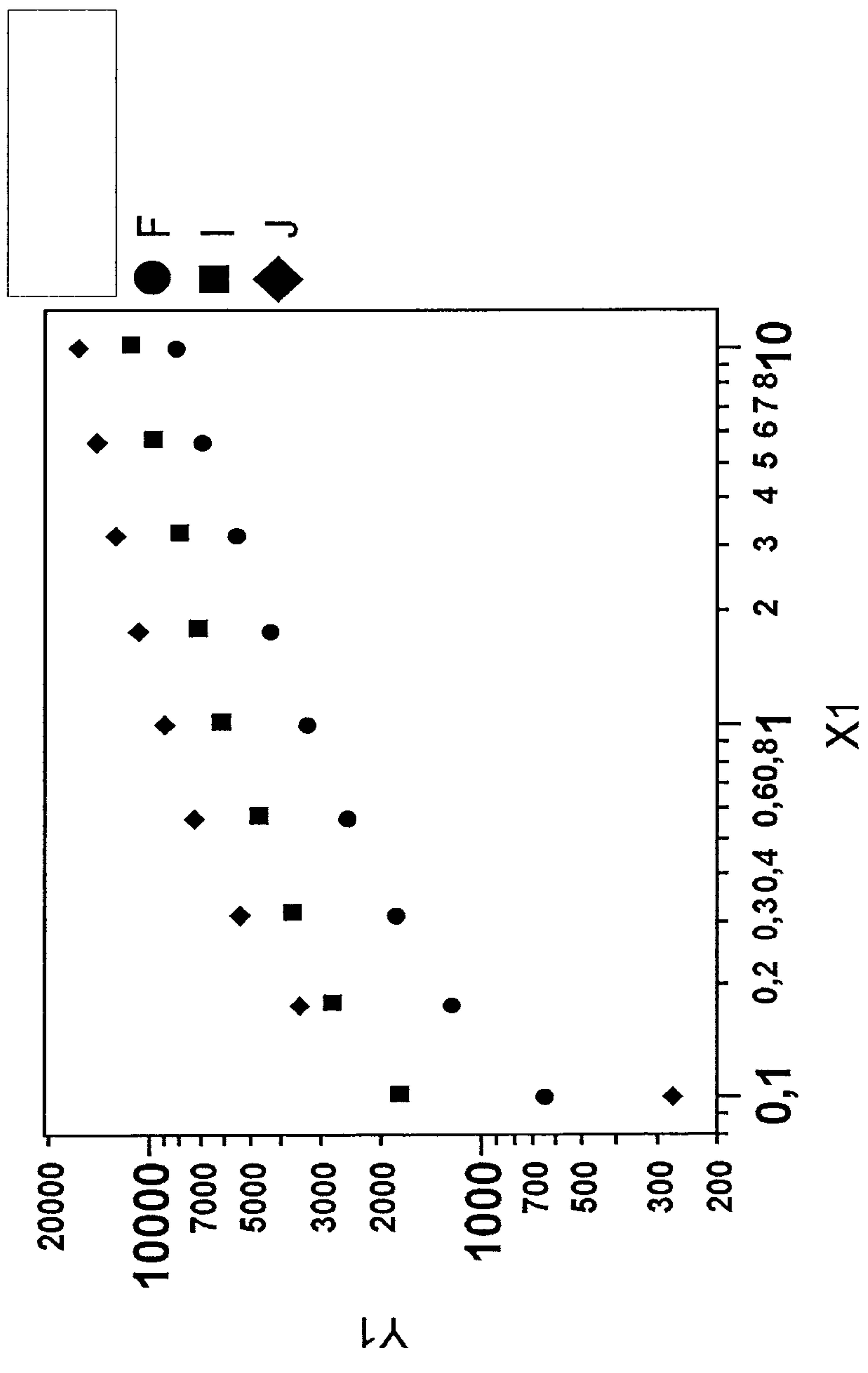
● F
■ I
◆ J
X1
0,1
0,2
0,3
0,4
0,6
0,8
1
2
3
4
5
6
7
8
10
Y1
20000
10000
7000
5000
3000
2000
1000
700
500
300
200

FIG. 32

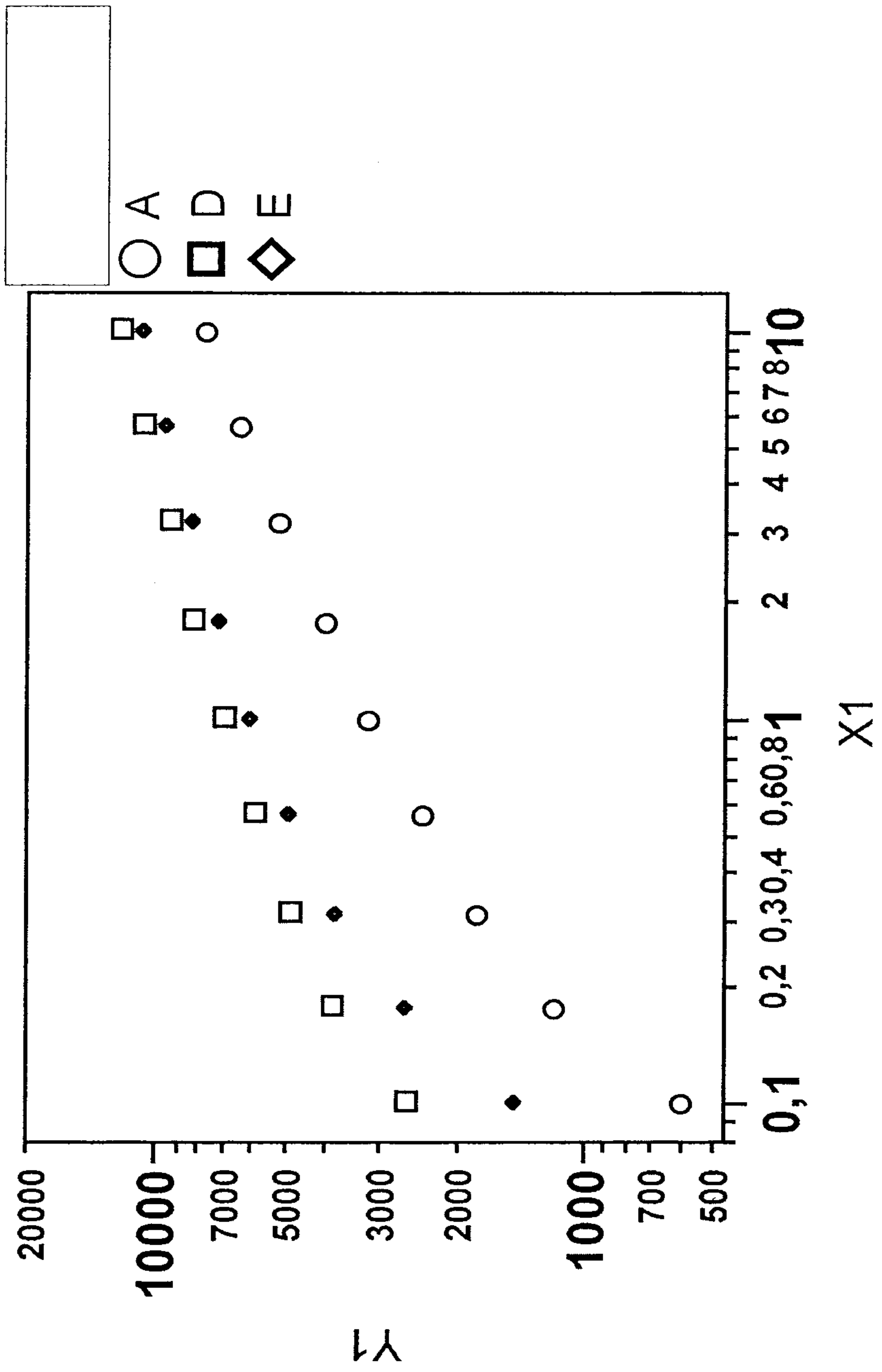
A
D
E
Y1
20000
10000
7000
5000
3000
2000
1000
700
500
X1
0,1
0,2
0,3
0,4
0,6
0,8
1
2
3
4
5
6
7
8
10

FIG. 33

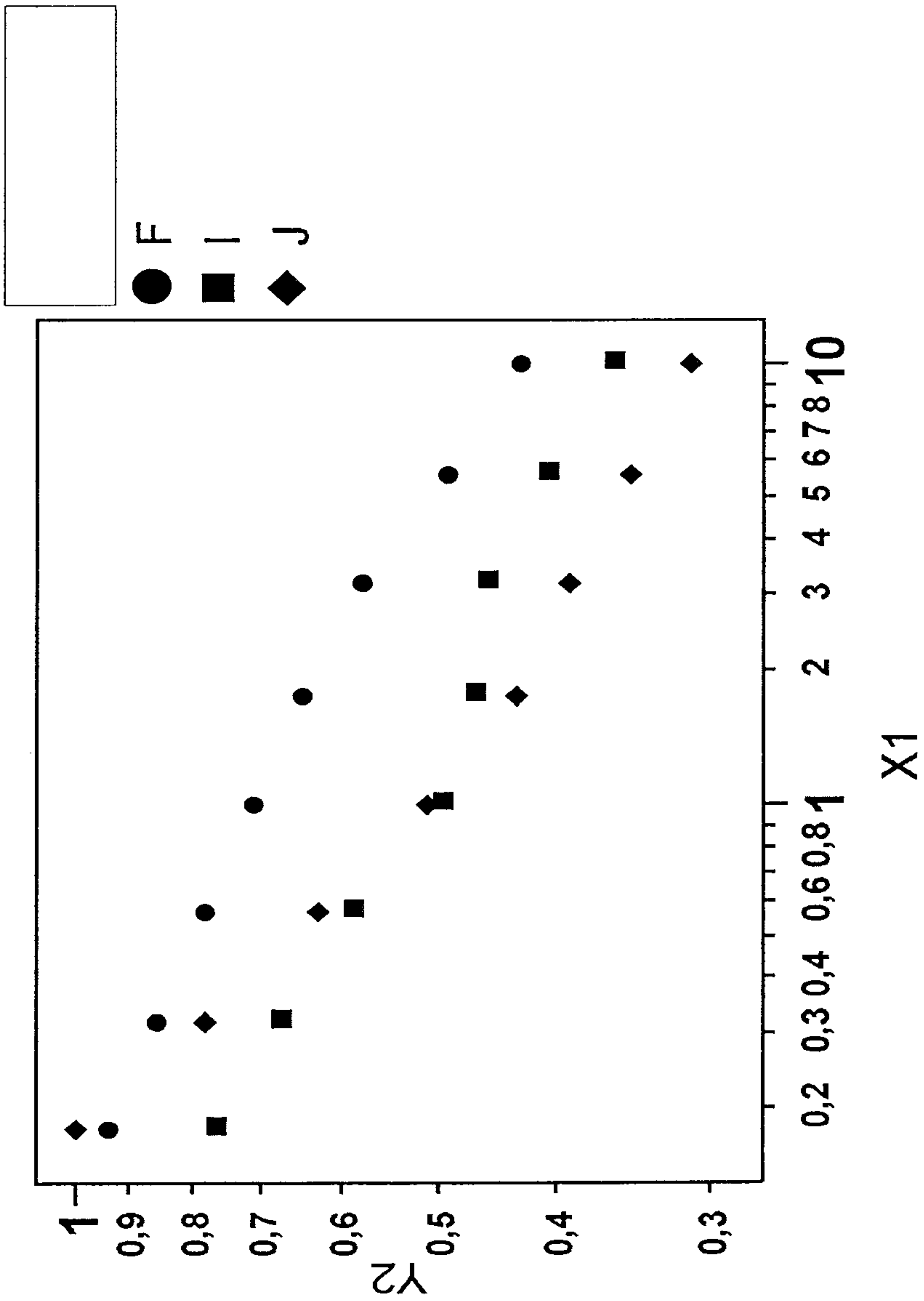

FIG. 34

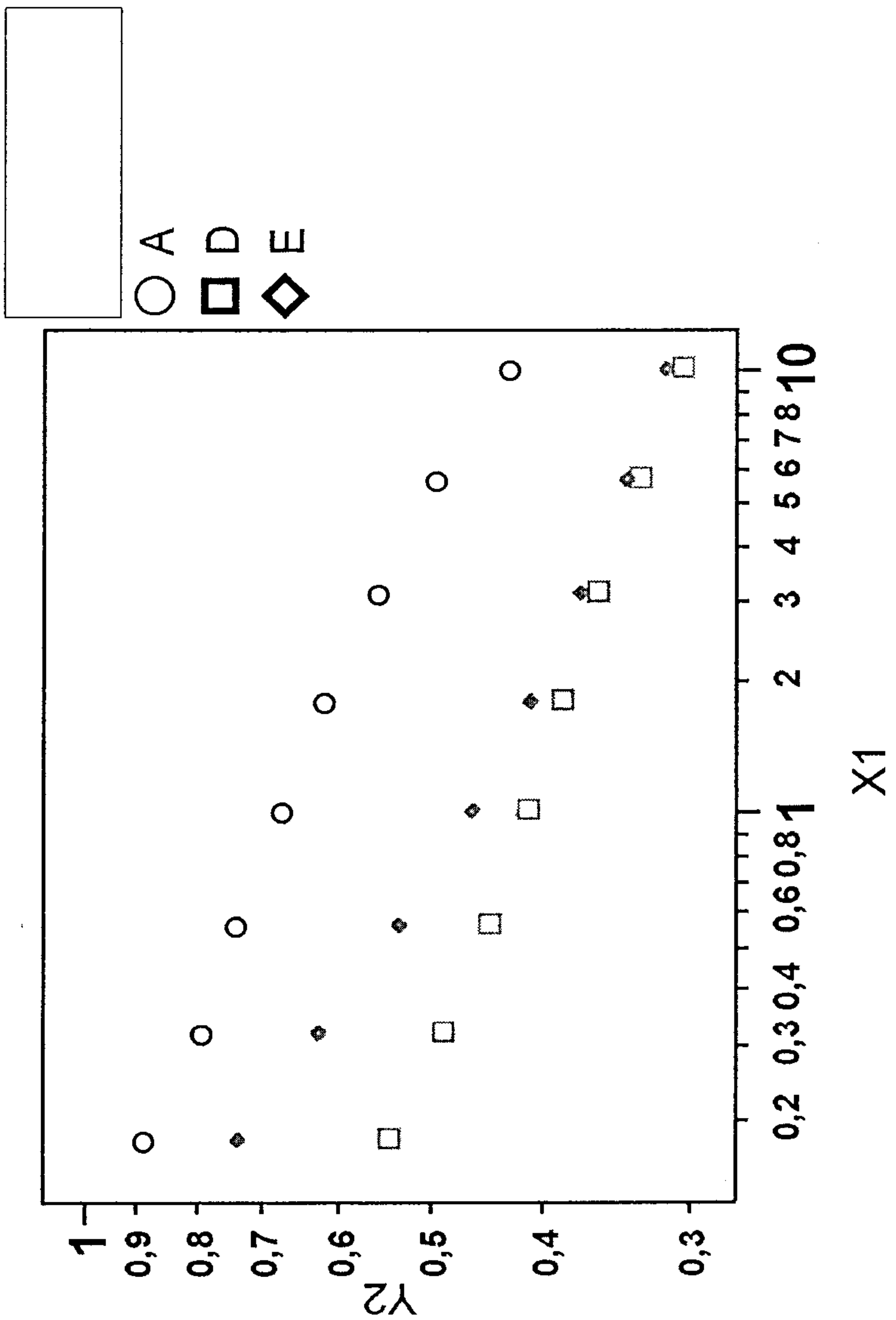

FIG. 35

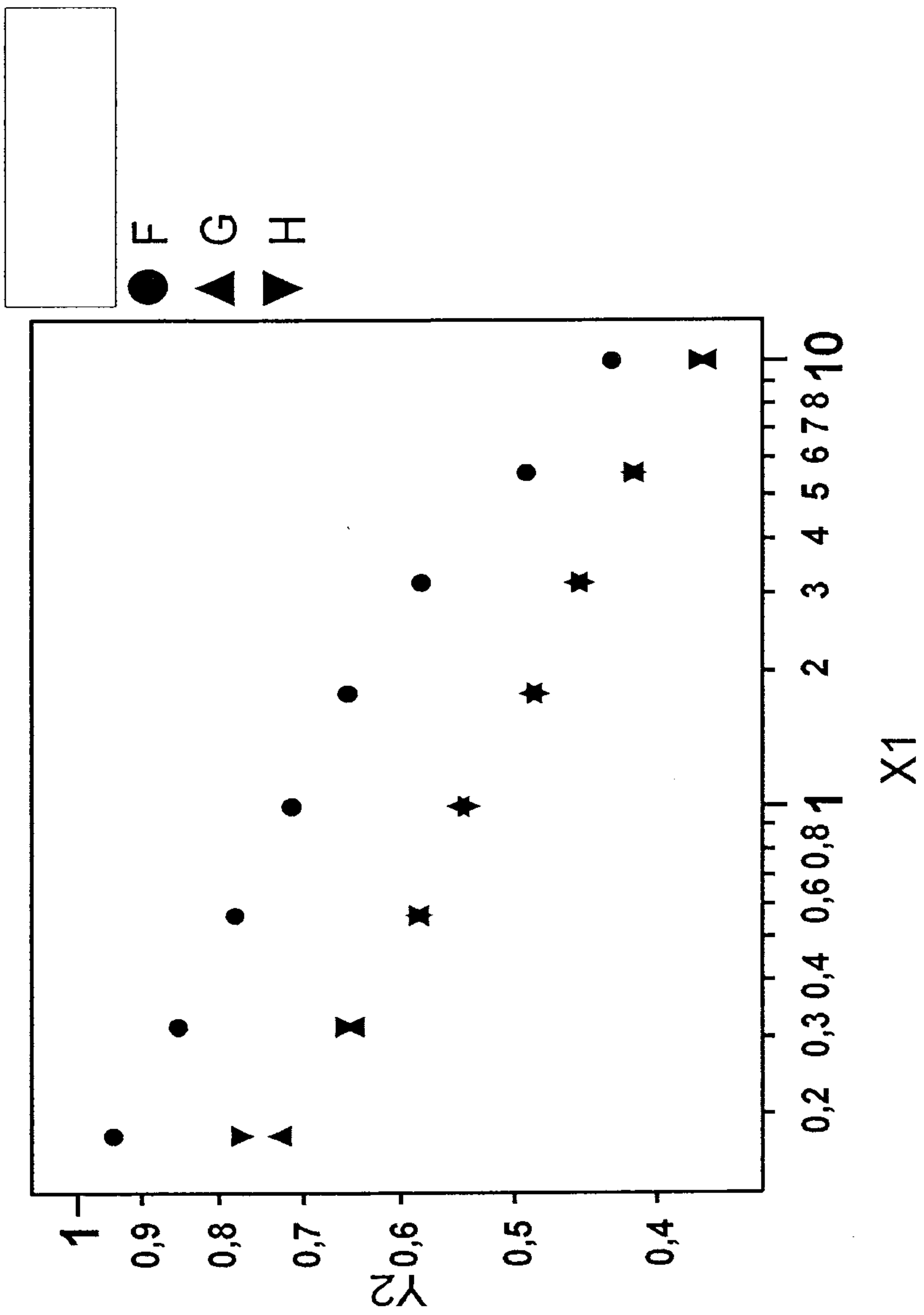

FIG. 36