PATENT SPECIFICATION

NO DRAWINGS

1,194,901

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International Classification:—**A 61** k 7/10.

COMPLETE SPECIFICATION

Polyamide Compositions

We, YARDLEY AND COMPANY LIMITED, a British Company of 33 Old Bond Street London England, do hereby declare the invention, which was communicated from Yardley of London Inc., a corporation organised under the laws of the State of New Jersey, United States of America, of Rockefeller Center, 620 5th Avenue, New York, United States of America, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention concerns hair grooming and hair fixative compositions and is more particularly concerned with an improvement in or modification of the hair grooming and hair fixative compositions described and claimed in our prior British Patent No. 1,117,129.

In British Patent No. 1,117,129, we have described and claimed a hair grooming composition comprising a polyamide material at least partly dissolved in a liquid, oily, non polar solvent consisting of or including a substance having a chain length of at least 10 carbon atoms in its molecule, the polyamide material being a reaction product of an aliphatic polycarboxylic acid and an alkylene polamine and having an everage molecular weight between 2000 and 14,000.

As examples of suitable polyamide materials we gave Versamid (Registered Trade Mark) resins particularly types 900; 930; 940; 950 and 100, Omamid (Registered Trade Mark) resins particularly types C and S, together with details of their pertinent properties.

As a result of further work on hair grooming compositions, however, we have now found that it is possible and in certain cases desirable, to modify the above composition by utilising a polyamide material which is a reaction product of an aliphatic poly carboxlyic acid and an alkylene polyamine and which has a molecular weight between 14000 and 15000.

Thus, according to the present invention there is provided a hair grooming composition according to any one of claims 1 to 9 or claim 11 of our British Patent No. 1,117,129 modified in that the polyamide material has an everage molecular weight between 14,000 and 15,000.

Suitable examples of polyamide materials, for use in the present invention, include Versalon (registered Trade Mark) resins.

Versalon polyamides have been identified as hard, flexible, thermoplastic resins, possessing higher tensile strength, elongation and melt viscosities than the Versamids disclosed in our aforesaid British Patent. They are quite different chemically from the Versamids in being linear polymers, derived from different polymer acids, and are of much higher molecular weight range than the Versamids, the molecular weight of Versalons ranging from 7000 to above 15,000.

The characteristics of two particularly suitable resins selected from the Versalon ranges are as follows:—

Resin Type	*Versalon 1165*	*Versalon 1175*
Specific Gravity	0.98	0.925-0.975
Colour, Gardner	8 - 12	8 - 12
Softening Point (Ring and Ball) °C	160-170	170-180
Viscosity at 410°F (210°C)	—	31-44 Poises
Viscosity at 392°F (200°C)	22 poises	—
Molecular Weight	C 15,000	C 15,000

[Price 5s. 0d.]

As in the compositions disclosed in our aforesaid patent, the modified compositions of the present invention may comprise one or more cosolvents which serve to dissolve the polyamide material and which are miscible with the oil so as to bring the composition into the form of a stable gel.

Also as with the compositions disclosed in our aforesaid patent, other ingredients such as diluents and cosmetically acceptable substances such as scents, tinting colours and the like may be incorporated into the compositions of the present invention.

The hair grooming compositions of the present invention may be prepared in accordance with the methods described fully in our prior patent.

Thus, in preferred methods, the compositions are prepared by dissolving the polyamide material in the hot organic system comprising the oily solvent and one or more cosolvents. Upon cooling a gel mixture is produced, the properties thereof depending upon the amount of polyamide present, the composition and molecular weight of the polyamide, and the compatibility and solubility of the polyamide in the oil chosen.

The solubility of the polyamide resin in the preferred solvent systems increases with temperature. Whenever the solubility limits of the polyamide material, in a particular solvent, are exceeded a gel results which is thermally and mechanically reversible. Gels can be produced of consistency anywhere from a soft jelly-like to a firm rigid structure, and with a grainy, a crystal-like fracture or amorphous with smooth glass-like fracture.

The tendency to syneresis of the oil-polyamide cosolvent gels can be controlled by use of long chain amides of intermediate polarity and/or by curing the gels by holding them at temperatures between the melting point and the usual storing temperatures. Examples of suitable long chain amides are set forth in our aforesaid patent.

The compositions of the present invention have comparable properties to these disclosed in our prior patent and have comparable advantages over the prior art compositions mentioned therein.

WHAT I CLAIM IS:—

1. A hair grooming composition according to any one of claims 1 to 9 or claim 11 of our British Patent No. 1,117,129, modified in that the polyamide material has an average molecular weight between 14,000 and 15,000.

2. A hair grooming composition according to claim 1 and comprising a cosolvent.

3. A hair grooming composition according to either of the preceding claims and substantially as herein before described.

For the Applicants
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As in the compositions disclosed in our aforesaid patent, the modified compositions of the present invention may comprise one or more cosolvents which serve to dissolve the polyamide material and which are miscible with the oil so as to bring the composition into the form of a stable gel.

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The hair grooming compositions of the present invention may be prepared in accordance with the methods described fully in our prior patent.

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