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DENTURE ADHESIVE COMPOSITIONS AND METHODS

TECHNICAL FIELD

This invention relates to denture adhesive compositions and in particular to improved
5 denture adhesive methods and compositions which include an adhesive component and a
viscosity index improver.

BACKGROUND OF THE INVENTION

Ordinary removable dentures, dental plates, partials, and the like, include teeth mounted
10 in a suitable plate or base. While dentures are traditionally fitted for the individual user, the fit
can change over time which may result in slippage or discomfort. Whether the fit is good or bad,
some users prefer extra security against slippage and/or dislodgement. Denture adhesives are
used to temporarily adhere the dentures to the surfaces of the oral cavity, in particular the oral
mucosa and give wearers the extra security they prefer. Denture adhesives are typically applied
15 to the denture, oral surface, or both at the beginning of the day when the dentures are placed into
the oral cavity. Unfortunately, denture adhesives tend to bioerode during the course of the day
due to the action of saliva, chewing, drinking, and the like. This erosion leads to loss of
adhesiveness, oozing of the adhesive into the oral cavity, dislodgement, etc. As such, there is a
need for improved denture adhesives.

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SUMMARY OF THE INVENTION

According to one embodiment, the present invention is directed to a denture adhesive
composition, comprising: a) a denture adhesive component and b) a viscosity index improver
selected from the group consisting of polymethacrylates, olefin copolymers, hydrogenated
25 styrene-diene copolymers, styrene polyesters, and combinations thereof.

These and other embodiments of the

DEFINITIONS

The abbreviation “cm”, as used herein, means centimeter. The abbreviation “mm” as used herein, means millimeter. The abbreviation “g” as used herein, means gram. The abbreviation “P” as used herein, means Pascal. The abbreviation “s” as used herein means
5 second. The abbreviation “Ps” as used herein means Pascal – second. The abbreviation “oz” as used herein, mean ounce.

The term “denture” as used herein refers to the upper or lower denture, a partial upper or lower denture, or any combination of partial and full dentures.

The term “viscosity index improver” as used herein refers to a water insoluble material
10 which makes the viscosity and/or rheology of a material into which it is incorporated more stable as its temperature is increased over a defined range. In the case of denture adhesive products, the defined range is between about 25°C and about 60°C.

The term “dispensed/dispensable from a tube” as used herein refers to a composition which can be dispensed from a small denture adhesive tube under manual pressure. A small
15 denture adhesive tube is made of a foil laminate, is about 3.5 inches long, about 0.48 inches wide, and holds about 0.25 oz of product. The internal diameter of the nozzle on the small denture adhesive tube is about 0.19 inches and the nozzle length is about 0.38 inches. An example of a small denture adhesive tube is a 0.25 oz sample size tube which is supplied by Alcan Corporation as stock item number 2293.

20 The term “preformed” as used herein refers to a denture adhesive composition which has been formed into a sheet suitably shaped to fit onto a denture.

The terms “olefin polymer,” “hydrogenated styrene-diene polymer,” “styrene polyester,” and “polymethacrylate” excludes elastomers and rubbers.

By "safe and effective amount", as used herein, is meant an amount of an agent high
25 enough to significantly (posit

The term "AVE/MA" as used herein refers to alkyl vinyl ether-maleic acid or anhydride copolymer. The term "mixed salts", as used herein, refers to salts of polymers, such as AVE/MA, where at least 2 different cations are mixed on the same polymer with each other or with other salts.

5 The term "toxicologically-acceptable", as used herein, is used to describe materials that are suitable in their toxicity profile for administration to humans and/or animals.

The term "non-aqueous", as used herein, means the composition is substantially free of added water. Substantially free means that no free water is added to the composition, but the composition may contain about 5% or less of water which comes in as part of other components.

10 The term "water-insoluble" as used herein refers to a material that, when exposed to water, does not dissolve, but may disperse to varying degrees. Generally, a material is water-insoluble if it is less than about 10% soluble in water.

The term "bioerodible" as used herein means that the composition, when exposed to water or saliva, will erode over time due to physical and/or chemical action. The composition may
15 erode completely or substantially, however ultimately the composition will lose its original form and/or integrity. For example, after application and use for at least about 24 hours in the oral cavity the composition will not have sufficient product integrity to easily separate or peel, in its original form, from the denture or oral surface.

Unless otherwise noted, the term "melting point" as used herein refers to the Drop
20 Melting Point which is the temperature at which the material becomes sufficiently fluid to drop from the thermometer used in making the determination under prescribed conditions as listed in ASTM D-127. If ASTM D-127 is not suitable for the material in question, then ASTM D-3954 can be used instead.

Unless otherwise noted, the term "derivative" as used herein refers to when the primary
25 polymeric backbone is left unchanged, but the side groups/chains and/or end groups are changed.

