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MOUTHWASH

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5 Claims. (Cl. 167—93)

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This invention relates to mouth washes and particularly to compositions of this character which may be utilized to have a very efficacious effect against dental caries.

Among the objects of the present invention is the production of compositions which can be utilized as mouth washes to prevent development of cavities in teeth.

Other objects and advantages will appear from the more detailed description set forth below, it being understood that such more detailed description is given by way of illustration and explanation only, and not by way of limitation since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accordance with the present invention it has been found that water soluble fluorides particularly of the alkali metals may be utilized in proper vehicles as a mouth wash or for related purposes, in limited concentrations in such mouth washes, to have a beneficial effect against development of cavities in teeth. The fluorides employed are desirably alkali metal fluorides of which ammonium fluoride or ammonium bifluoride has been found to be the best, while the sodium fluoride can be utilized. Potassium fluoride is the less efficacious. The fluoride is utilized in the vehicle which enables it to be carried into the enamel rods.

In such composition there is employed papain which digests proteins and malt or diastase such as takadiastase which digests starches. These ferments may be employed in such composition and do not interfere with each other. Other ferments cannot be employed in lieu of the particular ferments mentioned above and those set forth, namely, the papain and malt must be employed to give the most desirable results in accordance with the present invention. Such ferments together with the fluorides are desirably used in an aqueous composition which also contains zinc chloride and formaldehyde, as for example, commercial formalin. The most desirable proportions have been found to be 1 mole of fluoride to 1 mole of zinc chloride to 1 mole of formaldehyde but other ratios may be employed. The amount of fluoride present should be carefully controlled and should lie within about 15 to 30 grains per gallon of the final solution. Less than 15 grains per gallon does not give any substantial effect while more than 30 grains tends to give a mottling effect. The preferred range is from 15 to 25 grains per gallon.

The stated ingredients are desirably used in an aqueous vehicle and since zinc chloride has a tendency to decompose in the presence of water, a water-soluble non-toxic alcohol may desirably be added to prevent this effect. Ethyl alcohol is preferred, isopropyl and similar alcohols may be employed. Variation in the amount of alcohol and water proportions may, of course, be employed, but less alcohol than that indicated tends to give some undesirable feeling on the gums.

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Flavoring components as desired may be employed such as the flavoring oils like oil of cassia, oil of cloves, and saccharin may be included in small amounts. The composition may be colored with any suitable dye. If desired to impart a wintergreen aroma, this may be done by permitting the composition to stand within an atmosphere containing such oil of wintergreen for a period of about one week.

The following is a preferred formula:

	Parts
Zinc chloride	2
Formalin (commercial)	.5
Papain	100
Malt	100

The flavoring ingredients and vehicle components include:

	Parts
Oil of cassia	1.5
Oil of cloves	.5
Saccharin	.5
Ethyl alcohol	40
Water	1000

The materials may be mixed in any desired way and the fluoride added to produce the stated concentration of from 15 to 30 grains per gallon of solution, desirably 25 grains of sodium or ammonium fluoride being added for this purpose. While the fluoride may be incorporated together with all of the other ingredients, it is desirable to add it as the final component. The parts given in this example are by weight.

Compositions produced in accordance with the present invention have been proven to be a specific in preventing the formation of dental caries. This invention being a prophylactic only, does not have any action on dental caries that are in active progress.

Having thus set forth my invention, I claim:

1. A mouth wash containing zinc chloride, formaldehyde, papain, malt and water, and an alkali metal fluoride in an amount of from 15 to 30 grains per gallon of solution.

2. A composition as set forth in claim 1, in which the fluoride is ammonium fluoride.

3. A composition as set forth in claim 1, in which the fluoride is sodium fluoride.

4. A mouth wash as set forth in claim 1 containing an amount of a non-toxic aliphatic alcohol sufficient to prevent decomposition of the zinc chloride.

5. A mouth wash containing the following components in parts by weight: zinc chloride 2, formalin .5, papain 100, malt 100, ethyl alcohol 40, water 1000, and an alkali metal fluoride in an amount of 25 grains per gallon of solution.

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