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THICKENED AQUEOUS DETERGENT SOLUTIONS

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The present invention relates to aqueous solutions containing soapless detergents.

Soapless detergents are often marketed as aqueous solutions because of the hygroscopic nature of the water-free substances. These solutions contain usually about 10% of the active detergent. As these solutions, however, are of low viscosity they are apt to be used wastefully.

The object of the present invention is to provide aqueous solutions containing soapless detergents such that said solutions are of increased viscosity.

According to the present invention an aqueous solution of a soapless detergent has included in said solution an alkali metal salt of an acid ester of a partially esterified polyvinyl alcohol in which the vinyl alcohol groups are partly esterified by one or more polybasic acids and partly acetylated and partly unreplaced, for example a polyvinyl acetate maleate.

For example, the alkali salt may be a sodium salt of a polyvinyl acetate maleate when prepared according to British specification No. 552,011, British specification No. 602,974, or British specification No. 615,778.

The soapless detergent may be for example anion-active as for example "Teepol X" which is a 20 percent aqueous solution of the sodium salt of a higher alkyl sulphate or non-ionactive as for example a 30 percent aqueous solution of a polyethylene oxide condensation product of an alkyl phenol.

Aqueous solutions of soapless detergents according to the invention are illustrated by the following examples wherein the parts are parts by weight.

Example I

An aqueous solution of a soapless detergent according to the invention is one consisting of:

	Parts by weight
Water	42
"Teepol X"	50.0
A sodium salt of a polyvinyl acetate maleate	8.0

and having a viscosity of 140 centistokes. Without the sodium salt of the polyvinyl acetate maleate the viscosity is only 2.5 centistokes.

The sodium salt of the polyvinyl acetate maleate included is one prepared according to British specification 615,778.

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Example II

An aqueous solution of a soapless detergent according to the invention is one consisting of:

	Parts by weight
Water	59
A 30 percent aqueous solution of a polyethylene oxide condensation product of an alkyl phenol	33.0
A sodium salt of a polyvinyl acetate maleate	8.0

and having a viscosity of 1200 centistokes. Without the sodium salt of the polyvinyl acetate maleate the viscosity is 28 centistokes.

The sodium salt of the polyvinyl acetate maleate included is the same as that included in the solution of Example I.

I claim:

1. An aqueous solution of a soapless detergent selected from the group consisting of synthetic organic anionic and non-ionic soapless detergents, said solution being thickened with an alkali metal salt of an acid ester of a partially esterified polyvinyl alcohol in which the vinyl alcohol groups are partly esterified by maleic acid, partly acetylated and partly unreplaced.

2. A composition as claimed in claim 1, wherein said detergent is a synthetic organic anionic soapless detergent.

3. A composition as claimed in claim 1, wherein said detergent is a synthetic organic non-ionic detergent.

4. A composition as claimed in claim 2, wherein said soapless detergent is a 20% aqueous solution of the sodium salt of a higher alkyl sulfate.

5. A composition as claimed in claim 3, wherein said soapless detergent is a 30% aqueous solution of a polyethylene oxide condensation product of an alkyl phenol.

6. An aqueous solution of a soapless detergent having increased viscosity, said soapless detergent being selected from the group consisting of synthetic organic anionic and non-ionic soapless detergents and said solution containing about 10% by weight of said detergent and 8% by weight of an alkali metal salt of a polyvinyl acetate maleate.

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(References on following page)

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,970,578	Schoeller	Aug. 21, 1934
2,131,747	Nadeau	Oct. 4, 1938
2,145,345	Dreyfus	Jan. 31, 1939
2,227,200	Robie	Dec. 31, 1940

FOREIGN PATENTS

Number	Country	Date
116,315	Australia	Dec. 17, 1942

OTHER REFERENCES

Gregory, Uses and Applications of Chemicals, Etc., 1939, pp. 217 and 325.

Technology of Plastics and Resins, publication by Mason and Manning, 2nd printing, March 1946, page 296.