(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 076 166**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: 82305178.4

(22) Date of filing: 29.09.82

(51) Int. Cl.³: C 11 D 1/83
C 11 D 3/36, C 11 D 3/39

(30) Priority: 30.09.81 GB 8129512

(43) Date of publication of application:
06.04.83 Bulletin 83/14

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI NL SE

(71) Applicant: Interox Chemicals Limited
Hanover House 14 Hanover Square
London W1R 0BE(GB)

(72) Inventor: Smith, Eileen
19 Wells Close Mickle Trafford
Chester Cheshire(GB)

(72) Inventor: Timperley, Doreen Ann
30 Snowberry Close
Widnes Cheshire(GB)

(72) Inventor: Titchener, Dorothy Margaret
61 Oaklands Guilden Sutton
Chester Cheshire(GB)

(74) Representative: Pearce, Timothy et al,
Patent Department Laporte Industries Limited P.O. Box
2 Moorfield Road
Widnes Cheshire WA8 0HE(GB)

(54) Bleach composition.

(57) In one aspect the invention relates to aqueous detergent compositions and in a second aspect to bleach compositions both containing hydrogen peroxide and both particularised or modified by the presence of isopropyl alcohol as part of the stabiliser system therefor.

In a third aspect the invention relates to premixes containing 20 to 35 % hydrogen peroxide, water, aliphatic alcohol, phosphonate and preferably a polyhydroxycarboxylate, which can be augmented by the other components of the detergent/bleach compositions and if necessary diluted without any risk of passing through hazardous intermediate compositions inadvertantly.

EP 0 076 166 A2

Bleach Compositions

The present invention relates to bleach compositions, and in particular, to aqueous compositions containing a lower molecular weight aliphatic alcohol, and specially such compositions containing as bleach, hydrogen peroxide. The present invention also relates to concentrated bleach-containing compositions which can be diluted and/or augmented with customary components of liquid detergent compositions and other components of bleach compositions to form liquid detergent or bleach compositions suitable for dilution by the user to obtain washing solutions.

In European patent application no 81300964.4 due to be published under no 0037184, there are described compositions containing one or more surfactants, in some embodiments containing one or more builders, water and if desired hydrotrope and one or more detergent adjuvants, and in addition thereto hydrogen peroxide, a low molecular weight monohydroxyaliphatic alcohol, a polyhydroxyaliphatic carboxylate and an aminomethylenephosphonate or hydroxyalkyldiphosphonate. The class of low molecular weight monohydric aliphatic alcohols comprised those having up to 4 carbon atoms, of which the preferred alcohol was ethanol. Continuing investigation of the composition described in the said European patent specification and also processes for their manuacture and use have indicated that in many respects there is a great similarity between compositions containing ethanol and compositions containing

another member of that class of monohydric alcohols namely isopropanol. Such respects include, in general, the ability of isopropanol to maintain a single phase compostion when containing relatively high concentrations in total of surfactant, builder, hydrotrope and detergent adjuvants, and its ability to cooperate with other members of the stabiliser system to retard the rate of decomposition of hydrogen peroxide in such compositions. In addition, the resultant composition containing isopropanol tends to have a somewhat higher flash point when measured by the Peskey-Martin closed cup standard test apparatus, in comparison with otherwise identical ethanol-containing composition. This is of particular benefit in that it enables the compositions to be stored and handled in greater safety.

Consequently, in accordance with a first aspect of the present invention there are provided stabilised aqueous liquid detergent compositions according to either of claims 1 or 13 of European patent specification 37184A1, as published, wherein the low molecular weight monohydric aliphatic alcohol is isopropanol. Such claims so modified read :-

A stabilised aqueous built liquid detergent composition comprising at least 4 % of an anionic sulphate or sulphonate surfactant and/or of a non-ionic ethoxylate surfactant, at least 5 % of a builder selected from alkali metal polyphosphates and carboxylic complexing builders at least 2 % hydrogen peroxide, sufficient alkali metal aryl sulphonate hydrotrope to maintain the composition in a single phase, either by itself or in conjunction with other components, and a stabilising amount of a combination comprising isopropanol and an aminomethylene phosphonate or hydroxyalkyl diphosphonate and optionally a polyhydroxy aliphatic carboxylate , %'s being by weight.

A modification of the stabilised aqueous liquid detergent composition according to claim 1, being an unbuilt detergent composition comprising at least 10 % of an anionic surfactant and/or of a non-ionic ethoxylate surfactant, of

which at least 5 % is nonionic surfactant, at least 2 % hydrogen peroxide, sufficient alkali metal aryl sulphonate hydrotrope to maintain the composition in a single phase, either by itself or in conjunction with other components, and a stabilising amount of a combination comprising isopropanol and an aminomethylene phosphonate or hydroxyalkyl diphosphonate and optionally a polyhydroxy aliphatic carboxylate , %'s being by weight.

The said European patent specification makes reference to various matters of which one is the combination of the monohydric alcohol with other components to form a stabiliser system including an aminomethylenephosphonate or hydroxyalkyldiphosphonate and sometimes a polyhydroxyaliphatic carboxylate, and other matters include descriptions of the other components in the composition, including anionic surfactants, nonionic surfactants, builder, sulphonate hydrotropes, detergent adjuvants, the proportion of the various components in the compositions, methods for the manufacture of such compositions and methods of the use of such compositions in washing and/or bleaching various surfaces and fabrics. For the avoidance of doubt, any reference to any of such matters described in general terms in the European patent specification, which in practice are described between pages 3 to 20 thereof, is of equal applicability to the aforementioned first aspect of the present invention and is specifically imported hereinto. Thus, where the European patent specification makes reference to the aliphaticmonohydric alcohol, the proportion of it in the composition and the ratio of it to any other component of the stabiliser system and/or detergent composition, in the aforementioned pages 3 to 20, such references are specifically imported herein, all references to ethanol being altered to read isopropanol, except when referring to the origin of the ethanol. By way of example, in the first aspect of the present invention, it is highly desirable to employ isopropanol in a weight ratio to the phosphonate of from 50:1 to 2.5:1, preferably from 50:1 to 20:1 when the stabiliser system consists of the phosphonate

and the alcohol and likewise in many embodiments it is very convenient and advantageous to select the components within the ranges of 0.1 to 0.4 % for each of the polyhydroxy and phosphonate components and for 5 to 12 %, for the isopropanol all percentages being by weight.

A closely related invention to that described in the said European patent specification is that of British patent application no 8109743, also as yet unpublished. Said British application relates to aqueous bleach compositions containing hydrogen peroxide and ethanol and in conjunction with the ethanol, inter alia, an aminomethylenephosphonate or hydroxyalkyldiphosphonate, possibly together with a polyhydroxycarboxylate. For substantially the same reasons as given in respect of the first aspect of the present invention, it is highly desirable to employ isopropanol as the monohydric alcohol in the aforementioned aqueous bleach compositions.

Consequently, according to a second aspect of the present invention, there are provided aqueous bleach compositions according to claim 1 of the aforementioned British patent application, modified by the substitution of isopropanol for at least part of the ethanol. Such a claim so modified reads :-

A liquid bleach composition comprising at least 3 % hydrogen peroxide, at least 5 % isopropanol and in conjunction with the isopropanol a stabilising amount of a compound selected from amino compounds substituted by methylene phosphonate groups and hydroxyalkyl diphosphonates, and water.

For the avoidance of doubt, the description of such aqueous bleach compositions described in said British patent application, and particularly in pages 2 to 7 thereof is included herein, any reference to ethanol therein being substituted by a corresponding reference to isopropanol, except in the provision of ethanol in the form of methylated spirits. The compositions according to the second aspect of the present invention can be employed in the manner described in the British patent application and such

description thereof is also specifically imported herein.

A third aspect of the present invention relates to compositions containing hydrogen peroxide and the aforementioned stabiliser system therefore, many of which can be diluted and/or augmented by customary components of detergent compositions to form compositions described in either the European patent specification or the British patent application. It will be recognised that by the provision of such premix compositions, the hydrogen peroxide and stabiliser system therefore are always present together in the desired proportions during the manufacture of the bleach or detergent compositions, so avoiding the likelihood of unskilled operators who are ignorant of hydrogen peroxide and compostions containing it, straying into potentially hazardous ranges of compositions inadvertantly.

According the third aspect of the present invention, there are provided aqueous hydrogen peroxide compositions, many of which are suitable for dilution and augmentation to form liquid detergent compositions according to European patent specification no 0037184 or aqueous bleach compositions according to British patent application 8109743 which consist essentially of

a) from 20 to 35 % by weight, based on the composition, of hydrogen peroxide,

b) water in an amount of at least 3 parts per 7 parts by weight of hydrogen peroxide and

c) an organics component comprising a mixture of stabiliser in a weight ratio to the hydrogen peroxide of from 1:4 to 3:1 and a low molecular weight monohydric aliphatic alcohol and an aminomethylenephosphonate and/or an hydroxyalkyldiphosphonate and optionally with up to thrice its weight of a polyhydroxycarboxylate to a total weight ratio to the monohydric alcohol of from 1:4.5 to 1:60. To avoid confusion, a reference herein to the term premix or premix composition is a reference to compositions according to the third aspect of the present invention.

Advantageously, such composition can be made from readily available materials, for example aqueous hydrogen

peroxide solutions available commercially and having a concentration of from 30 to 70 % w/w and these premix compositions, therefore, provide a convenient and simple basis for producing hydrogen peroxide containing detergent compositions and bleaches.

Within the organics component of the premix, it is highly desirable that the monohydric alcohol is either ethanol or isopropanol, or a mixture thereof, by virtue of the desirability to include either or both of such compounds in a liquid detergent or bleach composition. Herein, eith respect to this third aspect, the terms polyhydroxyaliphatic carboxylate and aminomethylenephophonate and hydroxyalkyldiphosphonate have the same meanings as given in the aforementioned European patent specification and the preferences and selections of compounds encompassed by those terms are the same as described in the European patent specification. Accordingly, the polyhydroxyaliphatic carboxylate preferably has a carbon chain length of 5, 6 or 7 atoms and although it can be in acid form is preferably neutralised usually in the form of an alkali metal, preferably sodium or potassium salt thereof. The most preferred compound within that class is gluconate. Within the term methylenephosphonate, as described in said specification, many of the suitable phosphonates can be represented by the general formula, written below in acid form but in practice preferably present in at least partial alkali metal salt form of :-

$$[H_2O_3PCH_2]-[N(CH_2PO_3H_2)(CH_2)_p]_q-[N(MePO_3H_2)_2]$$

in which p is normally from 2 to 6 and q is normally from 0 to 2. Highly desirable examples are ethylene diamino tetra (methylene phosphonic acid) hexa potassium salt, and diethylene triamino penta (methylene phosphonic acid) hexa potassium salt. Further suitable examples include hexamethylene diamino tetra (methylene phosphonic acid), penta sodium salt.

Also as described in the European patent specification, the aliphatic diphosphonates can conveniently be represented in acid form by the formula $YZC(PO_3H_2)_2$ in which Y

represents an hydroxyl or amino group, the amino group itself optionally being substituted by a lower alkyl, a lower alkylamino or a lower hydroxyalkyl group, lower indicating from 1 to 4 carbon atoms, and Z represents a lower alkyl, preferably methyl group. Examples of such diphosphonates include 1 - amino ethane - 1,1- diphosphonic acid and 1 - hydroxyethane - 1,1-diphosphonic acid, and preferably the alkali metal salts thereof. Mixtures of any two or more of the aforementioned amino-methylene phosphonates and/or diphosphonates can be employed, as desired.

The stabiliser system forming the organics component of the premix can comprise a mixture of solely the phosphonate or phosphonates with the monohydric alcohol. However, it is preferable for the stabiliser system to contain additionally the polyhydroxyaliphatic carboxylate, in a weight ratio to the phosphonates of often from 3:1 to 1:3 and advantageously from 2:1 to 1:1 and in an especially preferred range, the weight ratio of polyhydroxycarboxylate to phosphonate is from 6:5 to 3:2. When all three components are present in the stabiliser system in the organics component, it is very desirable to have a weight ratio of monohydric alcohol to the two other components in total of from 10:1 to 50:1, and in many cases from 14:1 to 30:1. It is preferable to select the total amount of the phosphonate and polyhydroxycarboxylate within the range of weight ratio to the hydrogen peroxide in the premix of from 1:10 to 1:30 and especially from 1:15 to 1:25.

The compositions of the premix according to the present inventions can be seen readily by plotting them on a three component diagram and the area of the mix is the trapezium bounded by the coordinates, expressed in order of H_2O_2, organics, H_2O progressing clockwise of 35:50:15; 20:71.4:8.6; 20:5:75; 35:8.75:56.25. It is highly desirable in the premix to select the hydrogen peroxide to organics component weight ratio within the range of 7:5 to 7:10 and when plotted on the 3 component chart again produces a trapezium having the coordinates, expressed as

before of 35:50:15; 20:28.3:51.7; 20:14.3:55.7; 35:25:40. It will be recognised that compositions within the foregoing preferred range for the premix can be obtained very readily by dilution of commercially available grades of hydrogen peroxide, and in particular 35 % w/w, 50 % w/w and 70 % w/w. Thus, by way of example, mixture of 50 % w/w hydrogen peroxide with organics component can readily provide compositions containing 28-35 % hydrogen peroxide, 28-35 % water and 30-44 % organics component. Similarly when employing approximately 35 % w/w hydrogen peroxide, it is convenient to obtain compositions containing 23-27.5 % hydrogen peroxide, 43.5-51 % water and 33-21.5 % organics component.

In addition to the stabiliser system, the organics components can include one or more compatible organic compound selected from amongst components of liquid detergent compositions, as described in said European Patent Specification up to about one tenth of the total organics component. Such additional organic compounds include anionic or especially nonionic surfactants, organic hydrotropes, optical brighteners, and the like, details of which have already been incorporated hereinbefore with reference to the first aspect of the present invention. Thus, for example, it will be recognised that the premix can contain, if desired, up to 0.5 % of a peroxide-compatible organic brightener or 1 % of a surfactant.

It is important, for safety reasons, that the premix compositions are made by addition of the components in an appropriate order and manner. In practice, it will be usual for two to four materials to be mixed together to form the premix, one of which materials is concentrated hydrogen peroxide, a second is the monohydric alcohol either alone if there is a third material or containing the other components of the stabiliser system, and the third material comprises the phosphonate and, if used, the polyhydroxycarboxylate, although the latter can, if desired, be added separately also. One convenient method comprises first mixing the monohydric alcohol and the other organic components together

to form a mixture and thereafter introducing into the organics mixture, the concentrated hydrogen peroxide solution with constant agitation to ensure that the solution becomes homogenised very quickly. An alternative order that is equally suitable is to introduce the minor organic materials by weight, i.e. the phosphonate and polyhydroxycarboxylate into a mixture obtained by introduction of the aqueous hydrogen peroxide into the monohydric alcohol. In a further method is the organics component and the aqueous hydrogen peroxide are introduced simulataneously or possibly sequentially, as will be apparent from the disclosure herein, into a body of the premix, for example representing at least 10 times the volumes introduced per minute of organics component an aqueous hydrogen peroxide. It is emphasised that it is essential to avoid the introduction of the amounts of monohydric alcohol and other organic components needed in the once-formed premix into concentrated hydrogen peroxide, especially into greater than 40 % w/w aqueous hydrogen peroxide, in view of the fact that intermediate compositions would be very likely to be potentially hazardous and explosive. By the procedure of introducing the hydrogen peroxide into at least the bulk of the organics component, or into the body of premix, the dangers of forming hazardous compositions are averted and hydrogen peroxide even of 70 % w/w can be employed in safety. For the avoidance of doubt, the manufacture of the premix by introduction of peroxide into organics component is advocated even when the weight of aqueous hydrogen peroxide employed in any premix is greater than the weight of organics component.

The premix compositions can be made at any temperature in the range of from 5 to 50 °C, and it is particularly convenient to employ a temperature at or around ambient, such as 10 to 25°C.

The premix compositions described herein can readily be diluted to form aqueous bleach composition as described in the British patent application, either by addition thereinto of water or by introduction into water. Likewise, the

additional components of the liquid detergent compositions described in the European patent specification can be readily formulated by mixture therewith of the appropriate components, and once again the order of mixing of the peroxide-containing premix with the other components is of little importance provided that the relative amounts are selected correctly.

Having described the invention in general terms, specific embodiments thereof will now be described more fully by way of example only.

Examples 5-11 and 12 and Comparisons 1 to 4 and 13/14

Each of Examples 5-12 and Comparisons 1-4 was prepared by first mixing an anionic (ABS-linear C_{12} alkylbenzene sulphonate) and a nonionic (AEO-lower cut primary alcohol ethoxylate (n=9)-ETHYLAN CD919) surfactant, in amounts to give 6 % w/w and 4 % w/w repectively in the final product, with agitation and heating to about 40-45°C when a clear solution was obtained. The sulphonate hydrotrope (ELTESOL SX30, 6 %) and builder as specified in the Table were then stirred in with the surfactants, together with a proportion of the deionised water, which cooled the mixture. Next the stabiliser was added, as specified in the Table, as well the optical brightener (UVITEX BHT, 0.25 %). Finally, 35 % w/w aqueous hydrogen peroxide solution was stirred in to provide 7 % by weight hydrogen peroxide. In Example 12 and Comparisons 13 and 14, the compositions were made following the general method of the Comparisons/Examples 1 to 11, but employing 30 % of the said nonionic surfactant, 5 % of the said anionic surfactant, 0.25 % of the said optical brightener, 7 % hydrogen peroxide and stabiliser as shown in the Table, but no builder or hydrotrope.

In the Table, the abbreviations 'KTPP' refer to potassium tetrapyrophosphate, added as an aqueous solution, 'SC' to sodium citrate, SGP to a mixture of sodium gluconate and hexapotassium ethylenediaminetetra (methylene phosphonate) in a weight ratio of 4:3 available under the trade name POLYRON 1020, 'Meths' to a commercially available industrial grade ethanol containing a small amount of

methanol and IPA to isopropyl alcohol.

The storage stability trials for the Table were effected by transferring a small sample of the selected composition into a clean plastic bottle housed in a constant temperature enclosure at 32°C. The available oxygen concentration (Avox) in the composition was determined by the standard acidified potassium permanganate titration method on a small portion extracted from the sample and the result obtained after storage for a given period compared with the original content. The result shown for Examples 5 and 12 and comparisons 1-4 and 13/14 is the percentage of Avox lost from the hydrogen peroxide after 6 weeks storage, and for Examples 6 to 11, after 8 weeks storage.

The Table

	Builder Type	Stabilisers wt %	Alcohol	wt %	SPG wt %	Avox Loss
Comp 1	KTPP	10	-	-	0.35	7.1
Comp 2	"	10	Meths	5	-	8.6
Comp 3	"	10	"	5	0.35	4.7
Comp 4	"	10	IPA	5	-	9.2
Ex 5	"	10	"	5	0.35	4.0
Ex 6	SC	10	"	5	"	5.2
Ex 7	"	10	"	10	"	7.1
Ex 8	"	15	"	5	"	6.9
Ex 9	"	15	"	10	"	8.1
Ex 10	KTPP	10	"	5	"	5.2
Ex 11	"	10	"	10	"	7.8
Ex 12	-	-	"	5	"	4.7
Comp 13	-	-	-	-	"	6.6
Comp 14	-	-	IPA	5	-	8.0

From the Table it can be seen that the stabiliser system comprising meths and SPG performed substantially the same as IPA and SPG.

When the Peskey-Martin closed cup flash point test was

carried out on Comparison 3 and Example 5 compositions, the latter was found to be about 15°C higher, a typical difference, indicating that the IPA-containing compositions were inherently safer. When the two compositions were employed in fabric and stain washing trials by the general method employed in European Patent Specification 0037184A1 the results of the two compositions were in essence the same.

Examples 15 to 24

In these Examples, aqueous bleach compositions were prepared by dissolving the small amount of surfactant in a measured volume of demineralised water at approximately 40°C, introducing the stabilisers and aqueous hydrogen peroxide, the balance of water and finally alkali to the specified pH, whilst maintaining vigorous stirring.

The surfactants and hydrogen peroxide were the same as in the preceding Examples, and the abbreviation TEA indicates triethanolamine.

Table 2

Ex. No	Weight % in the composition						
	per-oxide	Base		Stabiliser		Surfactant	
		NaOH	TEA	IPA	SPG	ABS	AEO
15	6	*		5	0.35		1
16	6	*		5	"		1
17	6	*		5	"		1
18	6		*	5	"		1
19	6		*	5	"		1
20	6		*	5	"		
21	6		*	5	"		
22	6		*	5	"		
23	6	*		5	"	2	
24	6	*		5	"	2	

The stability and washing performance of these exemplified compositions was substantially the same as the compositions of the corresponding Examples, 13, 14, 15, 16,

17, 21, 22, 23, 26 and 27 of the said British Patent Application.

Examples 25 and 26

In each of these examples, a premix composition was obtained, by first introducing an aqueous SPG solution consisting of sodium gluconate (20% w/w), potassium salt of ethylene diamine tetra(methylene phosphonate) (15% w/w) and water (65% w/w) into respectively either ethanol (methylated spirits) (Ex.25) or isopropyl alcohol (Ex.26) in a weight ratio of aqueous SPG solution:alcohol of 1:5, and gradually stirring into that mainly organics component aqueous hydrogen peroxide (50%w/w) in a weight ratio to the organics component of 14:6. This produced compositions containing 35% w/w hydrogen peroxide, 38.25% w/w water and 26.75% w/w organics component in which the weight ratio of alcohol:SPG is 14.3:1. These premix compositions contained the hydrogen peroxide and the stabiliser system in the correct weight ratios so that one can obtain, by addition of 80 parts by weight of the other components (including water) to 20 parts of the premix, the compositions of respectively Comparison 3 and Example 5 herein.

Example 27

In this Example, the general procedure of Example 25 was followed except that the weight ratio of ethanol:said aqueous SPG solution was 10:1, and that of organics component to aqueous hydrogen peroxide (50 w/w) was 11:14. This produced a premix composition containing 28% hydrogen peroxide, 30.6% water and 41.4% organics component having a weight ratio of alcohol to SPG of 28.6:1. Dilution and augmentation of 25 parts by weight of this premix with 75 parts by weight of the components (including water) specified in respect of Example 50 of said European Patent Specification produces that composition.

Example 28

The composition of this Example was obtained by introducing with stirring 3 parts (all in this Example by weight) of the said aqueous SPG solution and 5 parts isopropanol, and 32 parts water into 60 parts aqueous

hydrogen peroxide (35% w/w). The resultant composition comprised 21% hydrogen peroxide, 72.95% water and 6.05% organics component having a weight ratio of alcohol to SPG of 4.8:1. This order of mixing was possible because the initial concentration of hydrogen peroxide was only 35 % w/w.

Claims

1. A stabilised aqueous built liquid detergent composition comprising at least 4 % of an anionic sulphate or sulphonate surfactant and/or of a non-ionic ethoxylate surfactant, at least 5 % of a builder selected from alkali metal polyphosphates and carboxylic complexing builders at least 2 % hydrogen peroxide, sufficient alkali metal aryl sulphonate hydrotrope to maintain the composition in a single phase, either by itself or in conjunction with other components, and a stabilising amount of a combination comprising isopropanol and an aminomethylene phosphonate or hydroxyalkyl diphosphonate and optionally a polyhydroxy aliphatic carboxylate, %'s being by weight.
2. A composition according to claim 1 in which the weight ratio of alcohol to the total weight of polyhydroxycarboxylate, if any, and phosphonate is from 10:1 to 50:1.
3. A composition according to claim 1 or 2 and further characterised by any feature or combination of features present in any of claims 2 to 12, or 14 to 23, or 26 to 29 of European Patent Specification 0037184A1.
4. A composition according to claim 1 or 2 and further characterised by any feature or combination of features present any of claims 30 to 35 of said European Patent Specification 0037184A1, any reference to ethanol therein being substituted by isopropanol.
5. A liquid detergent composition substantially as described herein with respect to any one of Examples 5 to 12.
6. A process for the production of detergent compositions according to any preceding claim wherein the components are mixed until an homogeneous mixture is obtained, the order of introduction of the components being such that the hydrogen peroxide contacts the

builder or surfactants only in the presence of the stabiliser system.

7. A process for washing or laundering comprising the steps of diluting a composition as described in any of claims 1 to 5 to a desired extent and contacting the article to be washed with the dilute solution at a temperature from ambient to the boiling point of the solution.

8. A liquid bleach composition comprising at least 3 % hydrogen peroxide, at least 5 % isopropanol and in conjunction with the isopropanol a stabilising amount of a compound selected from amino compounds substituted by methylene phosphonate groups and hydroxyalkyl diphosphonates, and water.

9. A composition according to claim 8 and further characterised by any feature or combination of features present in any of claims 2 to 11 of British Patent application 8109743, as filed.

10. A bleach composition substantially as described herein with respect to any one of Examples 15 to 24.

11. A process of bleaching in which the article or stain to be bleached is brought into contact with a bleaching composition according to claims 8, 9 or 10, optionally after dilution of the latter.

12. Aqueous hydrogen peroxide compositions, many of which are suitable for dilution and augmentation to form liquid detergent compositions according to European patent specification no 0037184 or aqueous bleach compositions according to British patent application 8109743, which consist essentially of
a) from 20 to 35 % by weight, based on the composition, of hydrogen peroxide,
b) water in an amount of at least 3 parts per 7 parts by weight of hydrogen peroxide and
c) an organics component comprising a mixture of stabiliser in a weight ratio to the hydrogen peroxide of from 1:4 to 3:1 and comprising a low molecular

weight monohydric aliphatic alcohol and an aminomethylenephosphonate and/or an hydroxyalkyldiphosphonate optionally together with up to thrice its weight of a polyhydroxycarboxylate to a total weight ratio to the monohydric alcohol of from 1:4.5 to 1:60.

13. A premix according to claim 12 in which the weight ratio of alcohol to hydrogen peroxide is selected within the range 5:7 to 10:7.

14. A premix according to claim 12 or 13 in which the weight ratio of alcohol to the total weight of polyhydroxy carboxylate and phosphonate is from 14:1 to 30:1.

15. A premix aqueous hydrogen peroxide composition, substantially as described herein with respect to any one of Examples 25 to 28.

16. A process for preparing a premix composition according to any one of claims 12 to 15 in which 30 to 70% w/w aqueous hydrogen peroxide is introduced into the alcohol and the phosphonate and any polyhydroxy carboxylate are either introduced subsequently into the alcohol/aqueous hydrogen peroxide mixture or into the alcohol before its mixture with hydrogen peroxide.

17. A process according to claim 16 in a modification of which the aqueous hydrogen peroxide and organics component are introduced into a body of the premix composition in such relative amounts and rates that the concentration of hydrogen peroxide in the mixture does not exceed 35% w/w.

18. A process for introducing a detergent composition according to any of claims 1 to 5 or bleaching composition according to any of claims 8 to 10 in which a premix composition according to any of claims 12 to 15 is augmented with the components of, respectively, the detergent or bleaching composition other than the hydrogen peroxide and stabilisers required and diluted as necessary to produce said

detergent or bleach compositions.

19. A hydrogen peroxide-containing composition or process for its preparation or process for washing or laundering employing any novel feature described herein alone with any other feature described herein.