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### (54) Automatic dishwasher detergent composition.

(57) Detergent compositions suitable for use in automatic dishwashing machines are disclosed. The compositions contain detergency builder materials, a chlorine bleach component, a low-foaming nonionic surfactant compatible with the bleach, optionally an alkyl phosphate ester and a source of bromide ions.

Croydon Printing Company Ltd

# AUTOMATIC DISHWASHER DETERGENT COMPOSITION

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## BACKGROUND OF THE INVENTION

### Field of the Invention

This invention relates to detergent compositions which are particularly suitable for use in automatic dishwashers. Such compositions are normally alkaline and contain detergency builder materials, relatively low levels of low sudsing surfactants and a source of available chlorine.

## SUMMARY OF THE INVENTION

This invention is based on modifications in conventional, automatic dishwasher detergent compositions that provide surprisingly effective cleaning and lessening of spotting and filming while requiring little or no pretreatment. While not limited thereto, granular compositions are especially preferred. In particular, the invention relates to automatic dishwasher detergent compositions containing a chlorine bleach ingredient, a surfactant compatible with said bleach ingredient and a source of bromide ions which comprise:

(1) from about 20% to about 95%, preferably from about 40% to about 90%, by weight of a detergency builder material, or mixtures thereof, on an anhydrous basis;

(2) a chlorine bleach ingredient to provide from about 0.1% to about 5%, preferably from about 0.5% to about 3%, of available chlorine based on the weight of the detergent composition;

(3) from about 0.1% to about 15%, preferably from about 1.5% to about 8% most preferably from about 2% to about 6%, of a low foaming, nonionic surfactant, preferably a surfactant which is solid at 35°C (95°F), preferably one comprising an ethoxylated nonionic surfactant derived from the reaction of a monohydroxy alcohol or alkylphenol in which the alkyl group contains from about 8 to about 20 carbon atoms, excluding cyclic carbon atoms, with from about 6 to about 15 moles of ethylene oxide per mole of alcohol or alkylphenol on an average basis;

(4) from about 0% to about 50%, preferably from about 2% to about 20%, based on the weight of the nonionic surfactant, of alkyl phosphate ester or mixtures thereof, preferably mono $C_{18}$ alkyl phosphate esters and/or di $C_{18}$ alkyl phosphate esters; and

(5) a material capable of generating from about 0.1 mole to about 10 moles of bromide ions, preferably from about .3 to about 3 moles per mole of available chlorine in aqueous solution.

## DETAILED DESCRIPTION OF THE INVENTION

### Detergency Builder Material

Compositions of the invention contain from about 20% to about 95%, preferably from about 40% to about 90%, by weight of detergency builder component, or mixtures thereof, on an anhydrous basis.

The detergency builder material can be any of the detergent builder materials known in the art which include trisodium phosphate, tetrasodium pyrophosphate, sodium tripolyphosphate, sodium hexametaphosphate, sodium silicates having $SiO_2:Na_2O$ weight ratios of from about 1:1 to about 3.6:1, sodium carbonate, sodium hydroxide, sodium citrate, borax, sodium ethylenediaminetetraacetate, sodium nitrilotriacetate, sodium carboxymethyloxysuccinate, sodium carboxymethyloxymalonate, polyphosphonates, polymeric carboxylates such as polyacrylates, and mixtures thereof. Preferably, monomeric organic detergency builder materials comprise not more than about 10% of the composition by weight.

Preferred detergency builder materials have the ability to remove metal ions other than alkali metal ions from washing solutions by sequestration, which as defined herein includes chelation, or by precipitation reactions. Sodium tripolyphosphate is a particularly preferred detergency builder material which is a sequestering agent. Sodium carbonate is a preferred precipitation detergency builder, particularly when it is desirable to reduce the total phosphorous level of the compositions of the invention. Chlorinated trisodium orthophosphate can act as both a chlorine bleach and a precipitation detergency builder material.

The inclusion of water-soluble silicates, especially sodium silicates having $SiO_2:Na_2O$ weight ratios of from about 1:1 to about 3.6:1 is a particularly preferred embodiment of the invention. Such silicates are a source of alkalinity useful in the automatic dishwashing process and also act to inhibit the corrosion of aluminum, glassware and ceramic glazes.

Particularly preferred compositions of the invention contain from about 15% to about 50% sodium tripolyphosphate, from about 5% to about 40% of sodium silicate solids as described hereinbefore and from 0% to about 25% sodium carbonate by weight.

## Chlorine Bleach Component

The compositions of the invention can contain a chlorine bleach ingredient to provide from about 0.1% to about 5%, preferably from about 0.5% to about 3%, of available chlorine based on the weight of the detergent composition.

An inorganic chlorine bleach ingredient such as chlorinated trisodium phosphate can be utilized, but organic chlorine bleaches such as the chlorocyanurates are preferred. Water-soluble dichlorocyanurates such as sodium or potassium dichloroisocyanurate dihydrate are particularly preferred.

Methods of determining "available chlorine" of compositions incorporating chlorine bleach materials such as hypochlorites and chlorocyanurates are well known in the art. Available chlorine is the chlorine which can be liberated by acidification of a solution of hypochlorite ions (or a material that can form hypochlorite ions in solution) and at least a molar equivalent amount of chloride ions. A conventional analytical method of determining available chlorine is addition of an excess of an iodide salt and titration of the liberated free iodine with a reducing agent.

## The Nonionic Surfactant

The compositions of the invention contain from about 0.1% to about 15%, preferably from about 1.5% to about 8%, most preferably from about 2% to about 6%, of a low-foaming nonionic surfactant, preferably one which is solid at 35°C (95°F), more preferably one which is solid at 25°C (77°F). Reduced surfactant mobility is a consideration in stability of the bleach component. Preferred surfactant compositions with relatively low solubility can be incorporated in compositions containing alkali metal dichlorocyanurates or other organic chlorine bleaches without an interaction that results in loss of available chlorine. The nature of this problem is disclosed in U.S. Patent 4,309,299 issued January 5, 1982 to Rapisarda et al and in U.S. Patent 3,359,207, issued December 19, 1967, to Kaneko et al, both patents being incorporated herein by reference.

In a preferred embodiment the surfactant is an ethoxylated surfactant derived from the reaction of a monohydroxy alcohol or alkylphenol containing from about 8 to about 20 carbon atoms, excluding cyclic carbon atoms, with from about 6 to about 15 moles of ethylene oxide per mole of alcohol or alkylphenol on an average basis.

A particularly preferred ethoxylated nonionic surfactant is derived from a straight chain fatty alcohol containing from about 16 to about 20 carbon atoms ($C_{16-20}$ alcohol), preferably a $C_{18}$ alcohol, condensed with an average of from about 6 to about 15 moles, preferably from about 7 to about 12 moles, and most preferably from about 8 to about 9 moles of ethylene oxide per mole of alcohol. Preferably the ethoxylated nonionic surfactant so derived has a narrow ethoxylate distribution relative to the average.

The ethoxylated nonionic surfactant can optionally contain propylene oxide in an amount up to about 15% by weight of the surfactant and retain the advantages hereinafter described. Preferred surfactants of the invention can be prepared by the processes described in U.S. Patent 4,223,163, issued September 16, 1980, Guilloty, incorporated herein by reference.

The most preferred composition contains the ethoxylated monohydroxyalcohol or alkyl phenol and additionally comprises a polyoxyethylene, polyoxypropylene block polymeric compound; the ethoxylated monohydroxy alcohol or alkyl phenol nonionic surfactant comprising from about 20% to about 80%, preferably from about 30% to about 70%, of the total surfactant composition by weight.

Suitable block polyoxyethylene-polyoxypropylene polymeric compounds that meet the requirements described hereinbefore include those based on ethylene glycol, propylene glycol, glycerol, trimethylolpropane and ethylenediamine as the initiator reactive hydrogen compound. Polymeric compounds made from a sequential ethoxylation and propoxylation of initiator compounds with a single reactive hydrogen atom, such as $C_{12-18}$ aliphatic alcohols, do not provide satisfactory suds control in the detergent compositions of the invention. Certain of the block polymer surfactant compounds designated Pluronic® R and Tetronic® by the BASF-Wyandotte Corp., Wyandotte, Michigan, are suitable in the surfactant compositions of the invention.

Because of the relatively high polyoxypropylene content of the block polyoxyethylene-polyoxypropylene polymeric compounds of the invention and particularly because of the terminal position of the polyoxypropylene chains, the compounds suitable for use in the surfactant compositions of the invention have relatively low cloud points. Cloud points of 1% solutions in water are typically below about 32°C and preferably from about 15°C to about 30°C for optimum control of sudsing throughout a full range of water temperatures and water hardnesses.

The preferred surfactants of the invention in combination with the other components of the composition provide excellent cleaning and outstanding performance from the standpoints of residual spotting and filming. In these respects, the preferred surfactants of the invention provide generally superior performance relative to ethoxylated nonionic surfactants with hydrophobic groups other than monohydroxy alcohols and alkylphenols, for example, polypropylene oxide or polypropylene oxide in combination with diols, triols and other polyglycols or diamines.

Alkyl Phosphate Ester

The compositions of the invention can optionally contain up to about 50%, preferably from about 2% to about 20%, based on the weight of ethoxylated nonionic surfactant of alkyl phosphate ester or mixtures thereof.

Suitable alkyl phosphate esters are disclosed in U.S. Patent 3,314,891, issued April 18, 1967, to Schmolka et al, incorporated herein by reference.

The preferred alkyl phosphate esters contain from 16-20 carbon atoms. Highly preferred alkyl phosphate esters are monostearyl acid phosphate and monooleyl acid phosphate, or salts thereof, particularly alkali metal salts, or mixtures thereof.

The alkyl phosphate esters of the invention have been used to reduce the sudsing of detergent compositions suitable for use in automatic dishwashing machines. The esters are particularly effective for reducing the sudsing of compositions comprising nonionic surfactants which are heteric ethoxylated-propoxylated or block polymers of ethylene oxide and propylene oxide.

## Bromide Containing Material

The compositions of the invention contain a water-soluble or water-solubilizable material capable of releasing from about 0.1 mole to about 10 moles, preferably from about 0.3 mole to about 3 moles, of bromide ions in aqueous solution per mole of available chlorine.

Useful water-soluble bromide containing materials include alkali metal bromides, alkaline earth metal bromides, organic salts such as bromoacetamide, or bromamine; and inorganic salts such as CuBr or $ZnBr_2$. The alkali metal bromides and alkaline earth metal bromides are preferred; sodium bromide, calcium bromide, and mixtures thereof are especially preferred.

As demonstrated hereinafter, the addition of a source of bromide ions results in an unexpected benefit in the starch removal performance of the compositions of the invention. Such significant improvement in starch removal decreases the amount of pretreatment necessary for effective cleaning.

An additional benefit provided by compositions of the invention is improved spotting and filming performance.

The prior art has not disclosed the starch removal benefit shown by the addition of bromide in an automatic dishwashing context.

Optional Ingredients

China protecting agents including soluble zinc and aluminum salts, aluminosilicates, aluminates, etc., can be present in amounts of from about 0.1% to about 5%, preferably from about 0.5% to about 2%.

Filler materials can also be present including sucrose, sucrose esters, sodium chloride, sodium sulfate, etc., in amounts from about 0.001% to about 60%, preferably from about 5% to about 30%.

Hydrotrope materials such as sodium benzene sulfonate, sodium toluene sulfonate, sodium cumene sulfonate, etc., can be present in minor amounts.

Dyes, perfumes, crystal modifiers and the like can also be added in minor amounts.

The compositions of the invention are not restricted as to manner of preparation. The preferred compositions can be prepared in any manner, including dry mixing, that results in formation of a granular product form. The process described in U.S. Patent 2,895,916 issued July 21, 1959, to Milenkevich et al, and variations thereof, are particularly suitable. Also particularly suitable is the process described in U.S. Patent 4,427,417, issued January 24, 1984 to Porasik. Both of these patents are incorporated herein by reference.

As used herein, all percentages, parts and ratios are by weight unless otherwise stated.

The following Examples illustrate the invention and facilitate its understanding.

## EXAMPLE I

A. 33.1 Parts by weight of powdered anhydrous sodium tripolyphosphate and 8.0 parts by weight of hydrous sodium silicate (82% solids, $SiO_2:Na_2O$ weight ratio of 2.4) were added to a ribbon mixer. With the mixer in operation the following ingredients were added during a cycle time of 180 seconds.

(a) from 0 seconds to 165 seconds

A blend of 13.8 parts of an aqueous sodium silicate solution containing 47.3% silicate solids with a $SiO_2:Na_2O$ weight ratio of 2.0 and 4.7 parts of an aqueous sodium silicate solution containing 37.5% silicate solids with a $SiO_2:Na_2O$ weight ratio of 3.2 was added as a spray. This blend also contained minor amounts of perfume and dye.

(b) at 60 seconds

19.4 Parts of sodium sulfate and 10.0 parts of sodium carbonate were added dry.

(c) from 60 seconds to 165 seconds

4.0 Parts of a polyoxyalkylene nonionic surfactant (condensation product of $C_{18}$ alcohol with average of 8.25 moles ethylene oxide) and 0.2 parts of monostearyl acid phosphate were added as a spray.

(d) at 145 seconds

5.0 Parts of sodium chloride having a particle size such that at least 80% passed through a 100 Tyler mesh screen were added dry.

(e) after 180 seconds

Product was discharged from mixer.

(f) 2.5 Parts of sodium dichlorocyanurate dihydrate was added and mixed in after product discharged from the mixer at step e) was dried to a water content of about 10 per cent and aged for about 24 hours.

B. The process of A is repeated with the addition of 2.5 parts NaBr admixed dry after step (f).

Water lost during processing accounts for any excess over 100 parts in the Compositions A and B.

## EXAMPLE II

A. 33.2 Parts sodium tripolyphosphate is metered into a Schugi blender-agglomerator and wetted with a metered atomized feed of 10 parts water, 4.2 parts of a mix consisting of 2 parts polyoxyalkylene nonionic surfactant (condensation product of $C_{18}$ alcohol with average of 7.9 moles ethylene oxide), 2 parts polyether polyol nonionic surfactant, and 0.2 parts monostearyl acid phosphate, forming small particle size agglomerates which are discharged into a closed container and continuously stirred for 15 minutes residence to effect hydration of the hydratable salts. The hydrated agglomerates are discharged through a grinder and then fed to a second Schugi blender-agglomerator concurrently with 20 parts of sodium carbonate, 17.2 parts sodium sulfate and 22.46 parts of an aqueous sodium silicate solution containing 47.3% solids and a $SiO_2:Na_2O$ weight ratio of 2.4 added as an atomized spray. Minor amounts of perfume and dye are also added to the silicate solution. The agglomerates of perfume and dye are also added to the silicate solution. The agglomerates formed in the second blender-agglomerator are fed into a fluid-bed dryer and 2.5 parts sodium dichloroisocyanurate dihydrate is added. The agglomerates are then contacted with heated air from blowers and held for 10 minutes residence to accomplish drying. The dried agglomerates are discharged from the fluid bed and sized.

B. The process of A is repeated with the addition of 2.5 parts NaBr admixed with the sodium dichloroisocyanurate dihydrate.

## EXAMPLE III

The following granular detergent compositions were prepared by the process of Example II.

| Composition (%) | Control | A | B | C |
|---|---|---|---|---|
| Nonionic surfactant (Na salts) | 4 | 4 | 4 | 4 |
| Sodium tripolyphosphate | 33 | 33 | 33 | 33 |
| Sodium carbonate | 20 | 20 | 20 | 20 |
| Sodium dichloroisocyanurate dihydrate (1.4% available chlorine) | 2.5 | 2.5 | 2.5 | 2.5 |
| Sodium sulfate | 16 | 16 | 16 | 16 |
| Sodium silicate (2.4r) | 10 | 10 | 10 | 10 |
| Monostearyl acid phosphate | 0.2 | 0.2 | 0.2 | 0.2 |
| Sodium bromide | 0 | 1.25 | 2.5 | 5 |
| Minors and water | ----------Remainder------------ | | | |

Standard Testing Conditions

The compositions were evaluated at a concentration of 0.3% in a Tergotometer with city water (Cincinnati - 6.5 grains hardness/gallon), at a temperature of 120°F (48.9°C). The soils were baked onto stainless steel coupons, except for the spaghetti starch which was baked onto a Pyrex® coupon. The coupons were agitated at 65 rpm for 10 minutes and soil removal efficiency was then measured gravimetrically.

| | Cheese Sauce | Spaghetti Starch | Cake Mix |
|---|---|---|---|
| Control | 79.2% | 49.3% | 60.0% |
| A | 85.9 | 58.4 | 61.6 |
| B | 90.9 | 62.7 | 70.2 |
| C | 89.3 | 71.7 | 67.1 |

As can be seen, the compositions of the invention consistently out performed the control on all soils.

## EXAMPLE IV

The compositions of Example III were evaluated on spaghetti starch under the standard testing conditions. The temperature was varied. Soil removal efficiency was measured after 10 minutes.

| | % Removal | | |
|---|---|---|---|
| Material | 100°F | 110°F | 120°F |
| Control | 63.2 | 45.6 | 50.3 |
| A | 65.1 | 47.3 | 64.4 |
| B | 68.8 | 54.1 | 66.0 |
| C | 69.8 | 60.3 | 72.3 |

## EXAMPLE V

The following granular detergent compositions were prepared by the process of Example II:

| Composition (%) | Control | A | B | C |
|---|---|---|---|---|
| Nonionic surfactant (Na salts) | 4 | 4 | 4 | 4 |
| Sodium tripolyphosphate | 33 | 33 | 33 | 33 |
| Sodium carbonate | 20 | 20 | 20 | 20 |

| | | | | |
|---|---|---|---|---|
| NaDCC·$2H_2O$ | 2.5 | 2.5 | 2.5 | 2.5 |
| $Na_2SO_4$ | 16 | 16 | 16 | 16 |
| Sodium silicate (2.4r) | 10 | 10 | 10 | 10 |
| Monostearyl acid phosphate | 0.2 | 0.2 | 0.2 | 0.2 |
| Sodium bromide | 0 | 0.25 | 0.5 | 1 |
| Minors and water | ----------Remainder------------ | | | |

The compositions were evaluated for soil removal efficiency in a Tergotometer at a concentration of 0.3% in city water (Cincinnati - 6.5 grains hardness/gallon) at a temperature of 150°F (65.5°C). The soil (spaghetti starch) was baked onto a Pyrex® coupon and agitated for 8 minutes at 65 rpm.

| Material | % Removal |
|---|---|
| Control | 78.8 |
| A | 80.7 |
| B | 83.0 |
| C | 89.9 |

## EXAMPLE VI

The following detergent compositions were tested for spotting/filming. The tests were run at 130°F (54.4°C) with 28.7 grains of product added to a Kenmore dishwasher. Water hardness was 7 grams per gallon. Eighteen grams of a combination Crisco/milk soil was added to the prewash. Four glasses were used for testing, glasses two and four were milk coated for each of the three cycles. There was a minimum cool down of two hours between cycles.

| | Composition A | Composition B |
|---|---|---|
| Nonionic surfactant | 0.35 | 0.35 |
| Sodium tripolyphosphate | 41.9 | 41.9 |
| Sodium carbonate | 30.5 | 30.5 |
| Sodium dichlorocyanurate dihydrate | 1.0 | 1.0 |
| Sodium bromide | 0 | 5.0 |
| Sodium silicate (2.4r) | 13.5 | 13.5 |
| Sulfate, minors and water | balance | balance |

Spotting

| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| A-1 | 8 | 6.0 | 6.5 |
| A-2 | 8 | 6.5 | 6.5 |
| A-3 | 7.5 | 6.5 | 6.0 |
| A-4 | 7.5 | 5.0 | 5.5 |
| B-1 | 8.5 | 6.5 | 6.5 |
| B-2 | 8.5 | 7.0 | 6.0 |
| B-3 | 8.5 | 6.5 | 6.0 |
| B-4 | 8.0 | 6.5 | 6.0 |

Averages A - 6.6 B - 7.0

Filming

| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| A-1 | 7.5 | 7.5 | 7.0 |
| A-2 | 7.5 | 7.0 | 7.0 |
| A-3 | 7.5 | 7.0 | 7.0 |
| A-4 | 7.5 | 7.0 | 7.0 |
| B-1 | 7.5 | 7.5 | 7.0 |
| B-2 | 7.5 | 7.0 | 7.5 |
| B-3 | 7.5 | 7.0 | 7.0 |
| B-4 | 7.5 | 7.0 | 7.0 |

Averages A - 7.2 B - 7.2

As can be seen above, the composition with the source of bromide ions outperformed an equivalent composition without bromide on spotting while performing equally on filming.

CLAIMS

1. A low sudsing detergent composition suitable for use in an automatic dishwashing machine comprising on an anhydrous basis:
   (a) from about 20% to about 95% by weight of a detergency builder material or mixtures thereof;
   (b) a chlorine bleach ingredient to provide from about 0.1% to about 5% of available chlorine based on the weight of the detergent composition;
   (c) from about 0.1% to about 15% of a low-foaming nonionic surfactant;
   (d) up to about 50%, based on the weight of the low foaming nonionic surfactant of an alkyl phosphate ester or mixtures thereof;
   (e) a material capable of generating from about 0.1 mole to about 10 moles of bromide ions per mole of the available chlorine in aqueous solution.

2. The composition of Claim 1 in granular form.

3. The composition of Claim 1 wherein said material capable of generating bromide ions is selected from the group consisting of alkali metal bromides, alkaline earth metal bromides, CuBr, $ZnBr_2$, n-bromoacetamide and mixtures thereof.

4. The composition of Claim 3 wherein said bromide containing material is sodium bromide, calcium bromide, or mixtures thereof.

5. The composition of Claim 4 wherein the said bromide is present in about a 1:1 molar ratio with the available chlorine.

6. The composition of Claim 1 wherein the low foaming nonionic surfactant is a solid at 35°C (95°F).

7. The composition of Claim 6 wherein the low-foaming nonionic surfactant comprises:

(a) from about 20% to about 80% based on the weight of the surfactant composition of the reaction product of a monohydroxy alcohol or alkyl phenol containing from about 8 to about 20 carbon atoms, excluding cyclic carbon atoms, with from about 6 to about 15 moles of ethylene oxide per mole of alcohol or alkyl phenol on an average basis;

(b) from about 20% to about 80% based on the weight of the surfactant composition of a block polyoxyethylene-polyoxypropylene polymeric compound containing in its structure the nucleus of a relatively low molecular weight reactive hydrogen compound having from 2 to about 6 reactive hydrogen atoms, the structure being such that at least about 80% of the oxyethylene groups are present in chains attached to the reactive hydrogen compound and at least about 80% of the oxypropylene groups are present in chains attached to the predominantly oxyethylene chains, the average molecular weight being from about 2000 to about 12,000 and ethylene oxide constituting from about 5% to about 30% by weight of the block polyoxyethylene-polyoxypropylene polymeric compound;

8. A low-sudsing granular detergent composition suitable for use in an automatic dishwashing machine comprising:

(a) from about 40% to about 90% by weight of a detergency builder material, or mixtures thereof;

(b) an organic chlorine bleach component to provide from about .5% to about 3% of available chlorine based on the weight of the detergent composition;

(c) from about 1.5 to about 8% of an ethoxylated nonionic surfactant comprising a surfactant derived from a straight chain alcohol which contains from about 16 to about 20 carbon atoms exclusive of cyclic carbon atoms condensed with an average of from about 7 to about 12 moles of ethylene oxide per mole of said alcohol;

(d) from about 0% to about 20% based on the weight of the ethoxylated nonionic surfactant of an alkyl phosphate ester or diester containing from about 16 to about 20 carbon atoms or the monovalent salts thereof, or mixtures thereof;

(e) from about 0.3 mole to about 3 moles of an alkali metal bromide, alkaline earth metal bromide or mixtures thereof per mole of available chlorine.

9. The composition of Claim 8 wherein the said ethoxylated nonionic surfactant comprises from about 2% to about 6% of a surfactant derived from a straight chain $C_{18}$ alcohol condensed with an average from about 7 to about 9 moles of ethylene oxide per mole of said alcohol.

10. The composition of Claim 9 wherein the surfactant additionally comprises from about 20% to about 80% based on the weight of the surfactant composition of a block polyoxyethylene-polyoxypropylene polymeric compound containing in its structure the nucleus of a relatively low molecular weight reactive hydrogen compound having from 2 to about 6 reactive hydrogen atoms, the structure being such that at least about 80% of the oxyethylene groups are present in chains attached to the reactive hydrogen compound and at least about 80% of the oxypropylene groups are present in chains attached to the predominantly oxyethylene chains, the average molecular weight being from about 2000 to

about 12,000 and ethylene oxide constituting from about 5% to about 30% by weight of the block polyoxyethylene-polyoxypropylene polymeric compound.

11. The composition of Claim 8 wherein the detergency builder material, or mixtures thereof, comprise a material selected from the group consisting of sodium tripolyphosphate, sodium carbonate, sodium silicate, hydrates thereof, and mixtures thereof.

12. The composition of Claim 8 wherein the organic chlorine bleach ingredient is a sodium dichloroisocyanurate dihydrate, potassium dichloroisocyanurate dihydrate, or mixtures thereof.

13. The composition of Claim 8 wherein the alkyl phosphate ester is selected from the group comprising mono $C_{18}$ alkyl acid phosphate, di-$C_{18}$ alkyl acid phosphate, and hydrates thereof and mixtures thereof.

14. The composition of Claim 8 wherein the bromide source is sodium bromide, calcium bromide, or mixtures thereof.

15. The composition of Claim 14 wherein the bromide source is present in a 1:1 molar ratio with the chlorine bleach ingredient.

16. The composition of Claim 1 containing material capable of generating from about 0.3 mole to about 3 moles of said bromide ions per mole of the available chlorine.