

Description

This invention relates to an encapsulated active-halogen bleach composition. The composition provides improved stability of the encapsulated oxidizing active-halogen in an alkaline environment such as in a detergent-bleach composition.

Background of the invention

The effectiveness of a detergent-bleach composition used in cleaning will vary depending on the temperature of the washing solution, the nature of the soil being removed, the nature and concentration of the active cleaner contained in the solution, hardness of the water and the like. One important consideration, in maintaining an effective concentration of bleach, is the stability of the bleach in the detergent-bleach composition. Typically, a halogen bleach in a detergent-bleach cleaning composition can react with other components in the cleaning composition such as sodium hydroxide and free moisture. This reaction during storage can result in a substantial loss of active-halogen and can result in a corresponding loss in the concentration of other cleaning components.

Many encapsulating procedures known in the art suggests coating a particle of bleach to isolate it from other reactive components in a cleaner. However, many of these encapsulated bleaches are not stable in highly alkaline environments. Further, encapsulating compounds such as tetrapotassium phosphate, hydratable inorganic salts and fatty acids having 12—22 carbon atoms must dissolve to release the active halogen. As a result, the encapsulating compounds generally remain in the washing solution and can interfere in either the washing or bleaching process. Further, these encapsulating compounds do not serve any other function other than encapsulating the active-halogen. An encapsulating compound which is also a cleaning compound, as in this invention, eliminates the introduction of unwanted compounds into the washing solution and reduces the cost of the detergent-bleach composition.

Encapsulation of an active-halogen source with a single inorganic coating is known in the art. One example of such a composition is taught by Brubaker, U.S. Patent No. 4,279,764. Brubaker discloses a bleaching composition containing a chlorine bleaching agent coated with a silicate bound, hydrated, soluble salt containing an N—H chlorine accepting component. Brubaker discloses the prepared composition to be useful in preventing dye and fabric damage caused by bleach during machine washing of fabrics. Brennan, U.S. Patent 3,637,509, discloses an encapsulated mixture of an organic chlorinating agent and an alkali metal tripolyphosphate encapsulated by tetrapotassium phosphate. Brennan discloses that the composition provides an improved stability with respect to the available chlorine. Hudson, U.S. Patent No. 3,650,961, discloses a method of encapsulating a core component in a hydratable inorganic salt by means of a fluidized bed. Hudson notes that wherein the core component is, for example, a chlorocyanurate the composition is useful in detergent mixtures wherein the composition exhibits excellent chemical and physical stability. Alterman, U.S. Patent Nos. 3,983,254, and 3,908,045, disclose an encapsulated composition and a process for making the composition, wherein the composition comprises an encapsulated core and a coating of a fatty acid having 12—22 carbon atoms and, when the core is a chlorine releasing agent, with a second coating of a fixed alkali hydroxide. The Alterman patents note that the composition is effective in preventing pinholing by the bleach.

Accordingly, a substantial need exists for an oxidizing halogen source that is stable in a highly alkaline environment, does not substantially degrade other cleaning components, and does not introduce unwanted and unnecessary components.

Summary of the invention

According to the present invention, there is provided a halogen bleach composition, compatible with an alkaline cleaning composition, that neither degrades the active components of the cleaning composition nor interferes with their action, which halogen bleach composition comprises an encapsulated composition having a core and at least one encapsulating coating effective to isolate the core, the core comprising a source of active-halogen, characterised in that the coating is a synthetic detergent other than a soap.

We have found that the problem of stabilizing a bleach in an alkaline environment such as a detergent bleach composition may be solved by encapsulating the bleach in a coating of a synthetic detergent or in a double coating of a soluble inorganic coating agent followed by a synthetic detergent. We have found that a double coating is not always required and that the application of a single coating of a synthetic detergent can in certain instances fully isolate the halogen source. However, we have found that the isolation of the halogen source can be assured by applying two coatings to the halogen core, a first coat of an inorganic coating agent and a second coat of a synthetic detergent. The intermediate inorganic coating agent layer isolates the synthetic detergent from the halogen to insure that any minimal degradation is avoided and promotes adherence of the synthetic detergent coating to the active-halogen core. Preferably the detergent and the inorganic agent are used in the cleaning composition in which the encapsulated halogen source is combined.

A first aspect of the invention is an encapsulated halogen bleach wherein the encapsulant prevents any substantial reaction between the halogen bleach composition and the other cleaning components. The halogen bleach has a single coating of synthetic detergent to prevent reaction of the bleach with the other

CF 0 205 205 01

components, wherein the synthetic detergent coating also aids in the cleansing process. In a second embodiment, the halogen bleach is encapsulated by a first layer of a soluble inorganic coating agent and a second layer of a synthetic detergent.

For the purposes of this application, a "halogen bleach", or "active-halogen" encompasses active-halogen containing oxidization and bleaching compositions which are capable of releasing one or more oxidizing halogen species (typically —OCl—).

For purposes of this application an "inorganic coating agent" as used herein, encompasses soluble inorganic compounds used as inert fillers in detergent compositions and soluble inorganic builders used in detergent compositions which contribute to the detergency of the composition, which do not substantially react with a halogen-bleach.

Detailed description of the invention

The encapsulated sources of halogen of this invention comprise a core of an active halogen compound and at least one coating layer. Preferably the encapsulated sources of halogen have a core and two or more coating layers. If one layer is used it consists of a synthetic detergent. If two layers are used the first layer consists of an inorganic coating agent and the second layer consists of a synthetic detergent.

Halogen source

The halogen releasing substances suitable as a core material include halogen components capable of liberating active halogen species such as a free elemental halogen or —OX— wherein X is Cl or Br, under conditions normally used in detergent-bleaching cleaning processes. Preferably the halogen releasing compound releases chlorine or bromine species. The most preferred halogen releasing compound releases chlorine. Chlorine releasing compounds include potassium dichloroisocyanurate, sodium dichloroisocyanurate, chlorinated trisodium-phosphate, calcium hypochlorite, lithium hypochlorite, monochloramine, dichloramine, [(monotrichloro)-tetra (monopotassium dichloro)]pentaaisocyanurate, 1,3 - dichloro - 5,5 - dimethyl hydantoin, paratoluene, sulfondichloro - amide, trichloromelamine, N - chloromelamine, N - chlorosuccinimide, N,N' - dichloroazodicarbonamide, N - chloro - acetyl - urea, N,N' - dichlorobiuret, chlorinated dicyandiamide, trichlorocyanuric acid, and dichloroglycoluril.

Dichloroisocyanurate dihydrate, the most preferred oxidizing chlorine source suitable as a core substance, is commercially available and may be obtained from Monsanto or FMC. The chemical structure of this compound is represented by the formula:



Synthetic detergent

The synthetic detergent compound coating must remain sufficiently solid at temperatures likely to be encountered during storage of the product, for example, temperatures of about 15 to 50°C, and also remain stable at temperatures likely to be encountered during processing of the product into end use mixtures, for example, temperatures of about 15 to 95°C.

Synthetic detergents that can be used include anionic, cationic, nonionic and amphoteric detergent compositions. Examples of anionic detergents useful in the detergent-bleach compositions of the invention are the higher alkyl mononuclear aromatic alkali-metal sulfonates, such as alkylbenzenesulfonates having 9 to 13 carbon atoms in the alkyl group wherein the alkyl group is derived from polypropylene as described by Lewis in U.S. Pat. No. 2,477,382, or wherein the alkyl group is a hexene dimer or trimer as in McEwan U.S. Pat. No. 3,370,100, or wherein the alkyl group is derived from alphaolefins, as in Swenson U.S. Pat. No. 3,214,462. Also there may be employed primary and secondary alkyl sulfates.

A particularly suitable synthetic detergent for use as a coating in the present invention is preoxidized sodium octyl sulfonate. The sodium octyl sulfonate may contain 1,2 alkaline bisulfonate as a byproduct of manufacture which does not affect the performance of sodium octyl sulfonate as a coating in the invention.

The organic compound coating is applied as a solution in a suitable solvent, water being preferred because of its compatibility and non-reactivity with chlorine releasing agents, non-flammability, and non-toxicity.

The compositions of the present invention may be formulated with a detergent builder as a detergency aid, for example, those mentioned hereinafter, to provide a commercially valuable detergent-bleach composition.

Soluble inorganic coating agent

Inorganic fillers suitable for coating agents include: alkalies such as sodium bicarbonate, sodium sequicarbonate, sodium borate, potassium bicarbonate, potassium sequicarbonate, potassium borate; phosphates such as diammonium phosphate, monocalcium phosphate monohydrate, tricalcium phosphate, calcium pyrophosphate, iron pyrophosphate, magnesium phosphate, monopotassium orthophosphate, potassium pyrophosphate, dry disodium orthophosphate, dihydrate trisodium orthophosphate, decahydrate tetrasodium pyrophosphate, sodium tripolyphosphate, sodium phosphate glass, neutral soluble salts such as sodium sulfate and sodium chloride; and silicates.

Suitable builder compounds are tetrasodium and tetrapotassium pyrophosphate, pentasodium and

pentapotassium triphosphosphate, sodium or potassium silicates, hydrated or anhydrous borax, sodium or potassium sesquicarbonate, phytates, polyphosphonates such as sodium or potassium ethane - 1 - hydroxy - 1,1 - diphosphonate etc.

When carrying out the process of the preparation of the compositions of the instant invention, the protective passivation coating of the invention is conveniently applied by means of the apparatus shown schematically in Figure 1. Referring to the drawings, a coating chamber or cylindrical tower 1 is shown, wherein the coating or encapsulation of the particles is accomplished. At the base of tower 1 is distributor plate 2. An unexpanded bed of the particles to be coated is contained in the tower 1. A downwardly projecting nozzle 3 constituting a spraying means is adjustably disposed within the tower 1, and adapted to be adjusted vertically so that the liquid droplets of coating material 6, discharged in a downwardly diverging three-dimensional spray pattern, would just cover the upper surface area of the bed.

The coating solution is contained in vessel 5 and is fed to nozzle 3 by pump 7. The spraying of the coating solution 6 from nozzle 5 may be aided by pressurized air entering tower 1 at inlet 13. Fluidizing gas passes through duct 11 and is forced through the distributor plate 2 by blower 9 and is either cooled by cooling system 8, or heated by heat exchanger 10, if required, in order to maintain the fluidized gas within a desired temperature range. An exhaust blower 12 removes solvent vapors.

A known weight of a multiplicity of particles to be coated is placed on the distributor plate 2. Air is caused to flow upwardly by the force created by blower 9 through duct 11, thereby expanding the thickness of the layer of particles, and maintaining the particles in continuous motion within the volume defined by the expanded bed, thus forming a fluidized bed 4. A solution of a solidifiable coating substance 6, contained in vessel 5, is sprayed by means of pump 7 through nozzle 3 on the fluidized bed 4 until all particles in the bed are completely coated. Particles coated by the above-described procedure are completely encapsulated with a continuous coating, and are free-flowing and nonagglomerated.

It is important that each particle be fully covered to prevent the oxidizing halogen source from reacting with an alkaline environment.

When it is desired to apply an initial coating of an inorganic coating agent and a subsequent coating of a synthetic detergent, the double coating may be conducted in a single fluidized bed either by applying the first coat, emptying the solution tank 6, filling the solution tank 6 with the second coating solution and then applying the second coat; or with a dual coating solution inlet to the atomizer as shown in Figure 1 by coating solution 5A, coating solution tank 6A and the pipes leading from 6A to the pump 7, the fluidized particles in the bed first being coated with the inorganic coating agent contained in solution tank 5, this first coating being allowed to dry and then a second coating of the synthetic detergent contained in solution tank 5A being applied, both coatings being conducted in accordance with the previous discussion on the operation of the fluidized bed.

A third method of applying a double coating in a fluidized bed is to coat the core particles with the inorganic coating agent in a first fluidized bed apparatus. The coated material then allowed to dry and placed in a second fluidized bed apparatus, wherein the encapsulated product produced in the first fluidized bed is coated with a second coating solution of a synthetic detergent. The fluidized bed operation conducted in accordance with the prior discussion of the operation of the fluidized bed.

Before removal of the encapsulated oxidizing chlorine source from the fluidized bed the temperature in the bed can be increased so as to drive off any solvent remaining in the encapsulate. However, the temperature must remain below the melting temperature of the encapsulant and below the degradation temperature of the encapsulated core.

The encapsulated halogen bleach sources of the present invention preferably comprise 20 to 90 wt.% halogen bleach source core and 10 to 80 wt.% synthetic detergent coating when a single coating is utilized and 20 to 89.5 wt.% halogen bleach source core, 0.5 to 50 wt.% inorganic coating agent first coat, and 10 to 70 wt.% synthetic detergent second coating when a double coating is utilized.

More particularly, the single coated halogen bleach source comprises 30 to 70 wt.% halogen bleach source core and 30 to 70 wt.% synthetic detergent coating and most particularly 40 to 55 wt.% halogen bleach source core and 45 to 60 wt.% synthetic detergent coating.

A more preferred embodiment of the double coated halogen bleach source comprises 30 to 80 wt.% halogen bleach source core, 5 to 50 wt.% inorganic coating agent first coating, and 5 to 50 wt.% synthetic detergent second coating. In a most preferred embodiment, the encapsulate comprises 35 to 60 wt.% halogen bleach source core, 15 to 45 wt.% inorganic coating agent first coating, and 10 to 35 wt.% synthetic detergent second coating.

Preferably, the inorganic coating agent is a mixture of 10 to 40 wt.% sodium triphosphosphate and 60 to 90 wt.% sodium sulfate, the synthetic detergent is sodium octyl sulfonate and the core comprises particles having a particle size of 2 mm to 250 μ m, preferably 2.38 mm to 125 μ m.

The detergent compositions with which the encapsulated bleaching agents of the invention find utility may have compositions represented by the following components and ranges of proportions hereof:

		Approximate percentage
5	Anionic or Nonionic Detergent	1—90%
	Organic and/or Inorganic Builders (including alkaline builders)	0—95%
	Encapsulated bleaching agent	0.5—25%
	Optical brightener	0—0.3%
10	Water	5—50%
	Filler	0—25%

12

The encapsulated bleaching agents of the invention find particular utility in combination with solid cast highly alkaline detergent compositions.

Other materials which may be present in such detergent compositions are those conventionally employed therein. Typical examples include the well-known soil suspending agents, corrosion inhibitors, dyes, perfumes, fillers, optical brighteners, enzymes, germicides, anti-tarnishing agents, and the like. The balance of the detergent composition may be water.

The invention may be more fully understood by reference to the following examples which include a best mode.

Example 1

This example describes a single coating process within the invention.

Ten pounds of the encapsulated oxidizing halogen source is made from 2.59 Kg (5.71 lbs) of granular dichloroisocyanurate dihydrate with particle sizes of 2 mm to 250 μ m (about 10 to 60 U.S. Mesh). The particles are placed onto the distributor plate of the cylindrical coating tower 1 (Figure 1). The particles are fluidized and suspended by an upwardly moving air stream supplied by blower 10. The temperature of the bed maintained between 43 and 83°C.

The coating solution is prepared by dissolving 2.52 kg (5.55 lbs) of 40% sodium octyl sulfonate in 2.52 kg (5.55 lbs) of soft water.

The coating solution is sprayed on the fluidized particles 3, through nozzle 5, appropriately adjusted as to height.

The coating solution is applied to the fluidizing particles for a period of about 1 hour. The coated particles being of substantially uniform size and being dry and free flowing. The coated particles comprising about 60 to 85 wt.% dichloroisocyanurate dihydrate.

Example 2

This example describes a dual coating process within the invention.

Ten pounds of the encapsulated oxidizing chlorine source was made from 2.59 kg (5.71 lbs) of granular dichloroisocyanurate dihydrate with particle sizes of about 2 mm to 250 mm (about 60 U.S. Mesh). The particles were placed onto the distributor plate of the cylindrical coating tower 1 (Figure 1). The particles were fluidized and suspended by an upwardly moving air stream supplied by blower 10.

The temperature of the bed maintained between 43 and 83°C throughout the coating process.

The first coating solution was prepared by dissolving 1.23 Kg (2.71 lbs) of sodium sulfate and 0.41 Kg (.90 lbs) of sodium tripolyphosphate in 5.13 Kg (11.3 lbs) of soft water. The first coating solution was sprayed on the fluidized particles 3, through nozzle 5, appropriately adjusted as to height.

The first coating solution was applied to the fluidized particles for a period of about 1 hour. The coated particles being of uniform size and being dry and free flowing.

The second coating solution was prepared by dissolving 2.52 Kg (5.55 lbs) of 40% sodium octyl sulfonate in 2.52 Kg (5.55 lbs) of soft water. The second coating solution was sprayed on the fluidized particles in the same manner as the first coating was sprayed onto the core particles.

The second coating solution was applied to the fluidized particles for a period of about 1 hour. The coated particles being of substantially uniform size and being dry and free flowing.

After addition of the second coating the bed temperature is allowed to rise to about 82.2°C (180°F) to assure that no free moisture is left in the encapsulate.

The encapsulates are then allowed to cool to less than 43.3°C (110°F) and discharged from the system.

The specification and examples are presented above to aid in the complete non-limiting understanding of the invention. Many variations and embodiments of the invention can be made without departing from the scope of the invention, as limited by the claims hereinafter appended.

Claims

1. A halogen bleach composition, compatible with an alkaline cleaning composition, that neither degrades the active components of the cleaning composition nor interferes with their action, which halogen bleach composition comprises an encapsulated composition having a core and at least one

Approximate
percentage

Anionic or Nonionic Detergent	1—90%
Organic and/or Inorganic Builders (including alkaline builders)	0—95%
Encapsulated bleaching agent	0.5—25%
Optical brightener	0—0.3%
Water	5—50%
Filler	0—25%

The encapsulated bleaching agents of the invention find particular utility in combination with solid cast highly alkaline detergent compositions.

Other materials which may be present in such detergent compositions are those conventionally employed therein. Typical examples include the well-known soil suspending agents, corrosion inhibitors, dyes, perfumes, fillers, optical brighteners, enzymes, germicides, anti-tarnishing agents, and the like. The balance of the detergent composition may be water.

The invention may be more fully understood by reference to the following examples which include a best mode.

Example 1

This example describes a single coating process within the invention.

Ten pounds of the encapsulated oxidizing halogen source is made from 2.59 Kg (5.71 lbs) of granular dichloroisocyanurate dihydrate with particle sizes of 2 mm to 250 μ m (about 10 to 60 U.S. Mesh). The particles are placed onto the distributor plate of the cylindrical coating tower 1 (Figure 1). The particles are fluidized and suspended by an upwardly moving air stream supplied by blower 10. The temperature of the bed maintained between 43 and 83°C.

The coating solution is prepared by dissolving 2.52 kg (5.55 lbs) of 40% sodium octyl sulfonate in 2.52 kg (5.55 lbs) of soft water.

The coating solution is sprayed on the fluidized particles 3, through nozzle 5, appropriately adjusted as to height.

The coating solution is applied to the fluidizing particles for a period of about 1 hour. The coated particles being of substantially uniform size and being dry and free flowing. The coated particles comprising about 60 to 85 wt.% dichloroisocyanurate dihydrate.

Example 2

This example describes a dual coating process within the invention.

Ten pounds of the encapsulated oxidizing chlorine source was made from 2.59 kg (5.71 lbs) of granular dichloroisocyanurate dihydrate with particle sizes of about 2 mm to 250 μ m (about 60 U.S. Mesh). The particles were placed onto the distributor plate of the cylindrical coating tower 1 (Figure 1). The particles were fluidized and suspended by an upwardly moving air stream supplied by blower 10.

The temperature of the bed maintained between 43 and 83°C throughout the coating process.

The first coating solution was prepared by dissolving 1.23 Kg (2.71 lbs) of sodium sulfate and 0.41 Kg (.90 lbs) of sodium tripolyphosphate in 5.13 Kg (11.3 lbs) of soft water. The first coating solution was sprayed on the fluidized particles 3, through nozzle 5, appropriately adjusted as to height.

The first coating solution was applied to the fluidized particles for a period of about 1 hour. The coated particles being of uniform size and being dry and free flowing.

The second coating solution was prepared by dissolving 2.52 Kg (5.55 lbs) of 40% sodium octyl sulfonate in 2.52 Kg (5.55 lbs) of soft water. The second coating solution was sprayed on the fluidized particles in the same manner as the first coating was sprayed onto the core particles.

The second coating solution was applied to the fluidized particles for a period of about 1 hour. The coated particles being of substantially uniform size and being dry and free flowing.

After addition of the second coating the bed temperature is allowed to rise to about 82.2°C (180°F) to assure that no free moisture is left in the encapsulate.

The encapsulates are then allowed to cool to less than 43.3°C (110°F) and discharged from the system.

The specification and examples are presented above to aid in the complete non-limiting understanding of the invention. Many variations and embodiments of the invention can be made without departing from the scope of the invention, as limited by the claims hereinafter appended.

Claims

1. A halogen bleach composition, compatible with an alkaline cleaning composition, that neither degrades the active components of the cleaning composition nor interferes with their action, which halogen bleach composition comprises an encapsulated composition having a core and at least one



encapsulating coating effective to isolate the core, the core comprising a source of active-halogen, characterised in that the coating is a synthetic detergent other than a soap.

2. A composition as claimed in Claim 1 wherein the core comprises a source of active-chlorine.

3. A composition as claimed in Claim 1 wherein the core comprises a dichloroisocyanurate compound.

4. A composition as claimed in any of Claims 1 to 3 wherein the synthetic detergent is an n-alkyl sulfonate compound.

5. A composition as claimed in Claim 4 wherein the an-alkyl sulfonate compound is an alkali metal octyl sulfonate.

6. A composition as claimed in any of Claims 1 to 5 wherein the core comprises 20 to 90 wt.% of the composition.

7. A composition as claimed in Claim 1 wherein the core comprises 30 to 70 wt.% of a dichloroisocyanurate dihydrate compound based upon the composition; and wherein the synthetic detergent is an n-alkyl sulfonate compound.

8. A composition as claimed in Claim 1 wherein the core comprises 40 to 55 wt.% of a dichloroisocyanurate dihydrate based upon the composition; and wherein the synthetic detergent is a sodium octyl sulfonate.

9. A composition as claimed in any of Claims 1 to 5, wherein an additional coating, namely a coating of a soluble inorganic coating agent, is disposed between the core and the coating of synthetic detergent.

10. A composition as claimed in Claim 9 wherein the soluble inorganic coating agent is a builder salt.

11. A composition as claimed in Claim 9 wherein the soluble inorganic coating agent is an alkali metal phosphate compound, sodium sulfate, or a mixture thereof.

12. A composition as claimed in any of Claims 9 to 11 wherein the core comprises 20 to 89.5 wt.% of the composition; wherein the coating of soluble inorganic coating agent comprises 0.5 to 50 wt.% of the composition; and wherein the coating of synthetic detergent comprises 10 to 70 wt.% of the composition.

13. A composition as claimed in Claim 9 wherein the core comprises 35 to 60 wt.% of a dichloroisocyanurate dihydrate based upon the composition; wherein the coating of soluble inorganic coating agent comprises 15 to 45 wt.% of a mixture of an alkali metal triphosphate and sodium sulfate based upon the composition; and wherein the coating of synthetic detergent comprises 10 to 35 wt.% of an n-alkyl sulfonate based upon the composition.

14. A composition as claimed in Claim 9, wherein the core comprises a particle of dichloroisocyanurate dihydrate having a particle size of 2 mm to 250 μ m (10 to 60 U.S. mesh); wherein the coating of soluble inorganic coating agent comprises 15 to 45 wt.% of a mixture of 10 to 40 wt.% sodium triphosphate and 60 to 90 wt.% sodium sulfate based upon the composition; and wherein the coating of synthetic detergent comprises 10 to 35 wt.% of a sodium octyl sulfonate based upon the composition.

15. A composition as claimed in any of Claims 1 to 13 wherein the core comprises particles having a particle size of 2.38 mm to 125 μ m (8 to 120 U.S. mesh).

Patentansprüche

1. Halogen-Bleichmittel, das mit einem alkalischen Reinigungsmittel verträglich ist und weder die aktiven Komponenten des Reinigungsmittels abbaut noch ihre Wirkung stört, wobei das Halogen-Bleichmittel eine eingekapselte Zusammensetzung aufweist mit einem Kern, der eine Quelle von aktivem Halogen enthält, und mit wenigstens einer einkapselnden Beschichtung, die wirksam den Kern isoliert, dadurch gekennzeichnet, daß die Beschichtung ein synthetisches Detergens außer einer Seife ist.

2. Mittel nach Anspruch 1, dadurch gekennzeichnet, daß der Kern eine Quelle von aktivem Halogen enthält.

3. Mittel nach Anspruch 1, dadurch gekennzeichnet, daß der Kern eine Dichlorisocyanurat-Verbindung enthält.

4. Mittel nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß das synthetische Detergens eine n-Alkylsulfonat-Verbindung ist.

5. Mittel nach Anspruch 4, dadurch gekennzeichnet, daß die n-Alkylsulfonat-Verbindung ein Alkaliocylsulfonat ist.

6. Mittel nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß der Kern 20 bis 90 Gew.-% des Mittels ausmacht.

7. Mittel nach Anspruch 1, dadurch gekennzeichnet, daß der Kern 30 bis 70 Gew.-% einer Dichlorisocyanurat-Dihydrat-Verbindung, bezogen auf das Mittel, enthält, und daß das synthetische Detergens ein n-Alkylsulfonat ist.

8. Mittel nach Anspruch 1, dadurch gekennzeichnet, daß der Kern 40 bis 55 Gew.-% eines Dichlorisocyanurat-Dihydrats, bezogen auf das Mittel, enthält, und daß das synthetische Detergens ein Natriumoctylsulfonat ist.

9. Mittel nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß eine zusätzliche Beschichtung, nämlich eine Beschichtung eines löslichen anorganischen Beschichtungsmittels, zwischen dem Kern und der Beschichtung aus dem synthetischen Detergens angeordnet ist.

10. Mittel nach Anspruch 9, dadurch gekennzeichnet, daß das lösliche anorganische Beschichtungsmittel ein Builder ist.



11. Mittel nach Anspruch 9, dadurch gekennzeichnet, daß das lösliche anorganische Beschichtungsmittel eine Alkaliphosphatverbindung, Natriumsulfat oder deren Mischung ist.

12. Mittel nach einem der Ansprüche 9 bis 11, dadurch gekennzeichnet, daß der Kern 20 bis 89,5 Gew.-% des Mittels ausmacht, daß die Beschichtung aus dem löslichen anorganischen Beschichtungsmittel 0,5 bis 50 Gew.-% des Mittels ausmacht, und daß die Beschichtung aus dem synthetischen Detergens 10 bis 70 Gew.-% des Mittels ausmacht.

13. Mittel nach Anspruch 9, dadurch gekennzeichnet, daß der Kern 35 bis 60 Gew.-% eines Dichlorisocyanurate-Dihydrats, bezogen auf das Mittel, enthält, daß die Beschichtung aus dem löslichen anorganischen Beschichtungsmittel 15 bis 45 Gew.-% einer Mischung eines Alkalitripolyphosphats und Natriumsulfats, bezogen auf das Mittel, enthält, und daß die Beschichtung aus dem synthetischen Detergens 10 bis 35 Gew.-% eines n-Alkylsulfonats, bezogen auf das Mittel, enthält.

14. Mittel nach Anspruch 9, dadurch gekennzeichnet, daß der Kern ein Teilchen von Dichlorisocyanurat-Dihydrat mit einer Teilchengröße von 2 mm bis 250 µm (10 bis 60 U.S. mesh) aufweist, daß die Beschichtung aus dem löslichen anorganischen Beschichtungsmittel, bezogen auf das Mittel, 15 bis 45 Gew.-% einer Mischung von 10 bis 40 Gew.-% Natriumtripolyphosphat und 60 bis 90 Gew.-% Natriumsulfat enthält, und daß die Beschichtung aus dem synthetischen Detergens 10 bis 35 Gew.-% eines Natriumoctylsulfonats, bezogen auf das Mittel, enthält.

15. Mittel nach einem der Ansprüche 1 bis 13, dadurch gekennzeichnet, daß der Kern Teilchen mit einer Teilchengröße von 2,38 mm bis 125 µm (8 bis 120 U.S. mesh) aufweist.

20

Revendications

1. Une composition de blanchiment halogénée compatible avec une composition alcaline de nettoyage, qui ne dégrade les composants actifs de la composition de nettoyage, ni ne gêne leur action, laquelle composition de blanchiment halogénée comprend une composition encapsulée ayant un noyau et au moins un enrobage d'encapsulation efficace pour isoler le noyau, le noyau comprenant une source d'halogène actif, caractérisée en ce que l'enrobage est un détergent synthétique autre qu'un savon.

2. Une composition selon la revendication 1, dans laquelle le noyau comprend une source de chlore actif.

3. Une composition selon la revendication 1, dans laquelle le noyau comprend un composé dichloro-isocyanurate.

4. Une composition selon l'une quelconque des revendications 1 à 3, dans laquelle le détergent synthétique est un composé n-alcoylsulfonate.

5. Une composition selon la revendication 4, dans laquelle le composé n-alcoylsulfonate est un octylsulfonate de métal alcalin.

6. Une composition selon l'une quelconque des revendications 1 à 5, dans laquelle le noyau comprend 20 à 90% en poids de la composition.

7. Une composition selon la revendication 1, dans laquelle le noyau comprend 30 à 70% en poids d'un composé dichloro-isocyanurate dihydraté relativement à la composition; et où le détergent synthétique est un composé n-alcoylsulfonate.

8. Une composition selon la revendication 1, dans laquelle le noyau comprend 40 à 55% en poids d'un dichloro-isocyanurate dihydraté relativement à la composition; et où le détergent synthétique est un octylsulfonate de sodium.

9. Une composition selon l'une quelconque des revendications 1 à 5, dans laquelle un enrobage additionnel, à savoir un enrobage d'un agent d'enrobage minéral soluble, est disposé entre le noyau et l'enrobage de détergent synthétique.

10. Une composition selon la revendication 9, dans laquelle l'agent d'enrobage minéral soluble est un sel adjuvant pour détergent.

11. Une composition selon la revendication 9, dans laquelle l'agent d'enrobage minéral soluble est un composé phosphate de métal alcalin, le sulfate de sodium ou un de leurs mélanges.

12. Une composition selon l'une quelconque des revendications 9 à 11, dans laquelle le noyau comprend 20 à 89,5% en poids de la composition; où l'enrobage de l'agent d'enrobage minéral soluble comprend 0,5 à 50% en poids de la composition et où l'enrobage du détergent synthétique comprend 10 à 70% en poids de la composition.

13. Une composition selon la revendication 9, dans laquelle le noyau comprend 35 à 60% en poids d'un dichloro-isocyanurate dihydraté relativement à la composition; où l'enrobage de l'agent d'enrobage minéral soluble comprend 15 à 45% en poids d'un mélange d'un tripolyphosphate de métal alcalin et de sulfate de sodium relativement à la composition; et où l'enrobage de détergent synthétique comprend 10 à 35% en poids d'un n-alcoylsulfonate relativement à la composition.

14. Une composition selon la revendication 9, dans laquelle le noyau comprend une particule de dichloro-isocyanurate dihydraté ayant une granulométrie de 2 mm à 250 µm (10 à 60 mesh US); où l'enrobage de l'agent d'enrobage minéral soluble comprend 15 à 45% en poids d'un mélange de 10 à 40%

65



en poids de tripolyphosphate de sodium et 60 à 90% en poids de sulfate de sodium relativement à la composition; et où l'enrobage de détergent synthétique comprend 10 à 35% en poids d'un octylsulfonate de sodium relativement à la composition.

15. Une composition selon l'une quelconque des revendications 1 à 13, dans laquelle le noyau
5 comprend des particules ayant une granulométrie de 2,38 mm à 125 µm (8 à 120 mesh US).

15

10

15

20

30

35

40

45

50

55

60

65

