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Europäisches Patentamt
European Patent Office
Office européen des brevets



11 Publication number:

0 253 676 B1

12

EUROPEAN PATENT SPECIFICATION

- 45 Date of publication of patent specification: **26.06.91** 51 Int. Cl.⁵: **C11D 1/75**, C11D 1/40,
C11D 1/58, C11D 17/00,
21 Application number: **87306355.6** C11D 7/08, C11D 3/02,
C11D 7/22, C11D 3/20
22 Date of filing: **17.07.87**

54 **Amine-acid thickening compositions.**

- 30 Priority: **17.07.86 AU 6989/86**
43 Date of publication of application:
20.01.88 Bulletin 88/03
45 Publication of the grant of the patent:
26.06.91 Bulletin 91/26
84 Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE
56 References cited:

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Description

The present invention relates to aqueous compositions of acids or acidic salts and more particularly to novel compositions of these acids or acidic salts which include a thickening agent.

As used in the specification acidic salts refer to those compounds which in an aqueous solution liberate protons.

Aqueous solutions of acids and acidic salts have long been used in compositions for cleaning. Such compositions include toilet bowl cleaners, metal cleaners and brighteners, rust stain removers, denture cleansers, metal descalers, general hard surface cleaners and disinfectants.

It has been found that a desirable property of many of the aforementioned compositions is that they have sufficient viscosity so as to allow the composition to be effectively applied to surfaces, for example, by brushing, or to allow the composition to remain in contact with the surface for a sufficient time to act. The latter function has particular relevance to the cleaning of angular surfaces such as those found in toilet bowls where prolonged contact between the composition and the bowl is required for effective cleaning.

There are many such compositions known in the art that have the requisite viscosity characteristics. Most of such compositions achieve their viscosity through the use of one or more of the following thickening agents:-

- (a) cellulose derivatives exemplified by sodium carboxymethyl cellulose, hydroxyethyl cellulose, methyl hydroxyethyl cellulose, methyl cellulose, hydroxypropylmethyl cellulose, hydroxybutylmethyl cellulose;
- (b) gums such as xanthan gum,
- (c) acrylic acid polymers such as Carbopol (Registered Trade Mark of B.F. Goodrich)
- (d) nonionic surfactants such as nonyl phenol ethoxylates;
- (e) poly(ethylene oxide) resins such as Polyox (Registered Trade Mark of Union Carbide);
- (f) anionic surfactants such as alkylbenzene sulfonates and alkyl ether sulfates; and
- (g) sodium silicates such as sodium metasilicate.

Most of these thickeners whilst able to effectively increase the viscosity of aqueous acid or acidic salt compositions do have some disadvantages in use.

The cellulose derivatives and gums tend to hydrolyse on storage which results in a reduction in viscosity of the composition. They are also generally difficult to dissolve, in some cases intensive mixing being required in order to bring them into solution.

Acrylic acid polymers are generally only useful in solutions which have a pH near neutral and above. They also tend to hydrolyse on storage and to achieve viscosity, need to be neutralized with a fairly strong alkali.

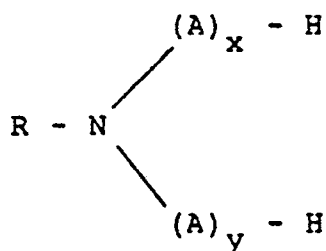
Nonionic surfactants have the disadvantage that usually high levels of about 5-10% are required to achieve satisfactory viscosity, thus making them expensive to use.

The poly(ethyleneoxide) water soluble resins also require generally high levels to achieve desirable composition viscosity and additionally, in some acid solutions show significant instability.

Sodium silicates are able to produce aqueous acid or acidic salt gel compositions. However, in developing viscosity in a composition, it has been noted that the viscosity generally develops over a long period of time, for example, as much as twelve hours. In commercial manufacturing processes, this is often inconvenient. It is also to be noted that on storage, such gels tend to break down into small pieces which in many instances is undesirable.

Other thickening agents and compositions disclosed in the art which relate to an aqueous acid and/or acidic salt compositions include:-

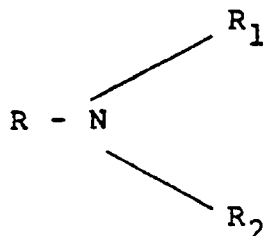
GB-A-1,443,244 (Reckitt & Colman Products Limited) which discloses a thickening agent of the formula:



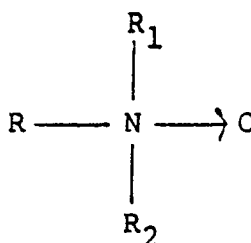
for thickening aqueous compositions of mineral acids and acid salts of strong inorganic acids.

GB-A-2,071,688 (Jeyes Limited) which discloses as a thickening agent a mixture of:

- (a) a substantially acid insoluble compound of the formula (I) or (II); and
 (b) a substantially acid soluble cationic or nonionic surfactant, for thickening aqueous compositions of inorganic acids or acid salts of strong inorganic acids.



(I)



(II)

These compositions require a substantially acid soluble cationic or nonionic surfactant to achieve thickening.

US-A-3,786,091 (Bolsing) which discloses a phosphoric acid containing base paste, produced by preparing a finely divided aqueous dispersion of a long chain amine, preheating this dispersion, introducing preheated phosphoric acid thereinto with vigorous agitation, at elevated temperature until neutral and then stirring the resulting mixture until cold.

US-A-4,021,377 (Borchert et al) which discloses a citric acid-amine reaction product obtained by mixing citric acid and water soluble or water dispersible amine in water until all the citric acid is dissolved. Generally the reaction is accompanied by a rise in temperature to about 40° C over an hour. The resultant solution containing amine salts of citric acid and citric acid amides is viscous. It is to be noted that the concentrations of citric acid and the amines exemplified are particularly high, the amines exemplified being in the range 12-45% W/W and the citric acid, 19.2% W/W. Further, only the amines monoethanolamine, diethanolamine and triethanolamine are exemplified.

US-A-3520820 discloses amine-containing corrosion inhibitors which contain aliphatic amines and acetic acid and which are mixed with non-ionic emulsifiers to form liquid, cold water dispersible emulsions. The compositions contain only from 0.1 to 0.6 mole of acid per mole of the fatty amine and thus are not acidic compositions.

US-A-3925229 discloses the production of a phosphoric acid containing paste intended for use in the cleaning of metals. No compositions are disclosed which are not in paste form.

FR-A-2459830 discloses cleaning compositions which may be for the cleaning and removal of tartar from sanitary ware, such as toilet bowls. The invention is directed to aqueous solutions of sulfamic acid, the viscosity of which is adjusted and stabilized by the addition of four types of viscosity adjusting or thickening agents.

US-A-4021377 discloses liquid detergent compositions which comprise the reaction product of citric acid and a water-soluble or water-dispersible amine. The reaction product is said to be a mixture of amine salts of citric acid and citric acid amides.

The present inventor has recognized the difficulties of the prior art thickening agents for such aqueous acid or acidic salt compositions. Accordingly, the present invention seeks to provide alternative composi-

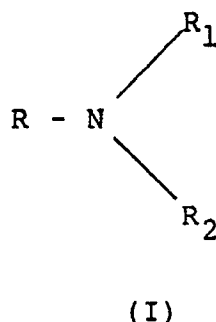
tions to those of the prior art.

Accordingly, the present invention provides a thickened aqueous liquid toilet bowl cleansing composition having a pH of not more than 6.5 and having a viscosity of not less than 30 mPas at 25 °C when measured with a Brookfield RVT viscometer at 50 rpm using a No. 1 spindle, which composition comprises at least one acid or acidic salt, optionally a strong ionic salt, and, as the sole organic agent to thicken the composition and impart said viscosity to the composition in an amount of from 0.1 to 10% w/w, at least one compound of the formula:



in which R contains 8 to 24 carbon atoms and is a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, R₁ is hydrogen, a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, R₂ is hydrogen, a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, provided that if either R, R₁ or R₂ is an alkyl or alkenyl group derived from a fatty acid obtained from a natural oil or fat or an equivalent synthetic fatty acid, or is an alkaryl group containing from 8 to 12 carbon atoms in the alkyl moiety, then the other substituents are not respectively of the formulae: [A]_x - H and [A]_y - H, where A is either ethoxy or propoxy and x, y are independently 1, 2 or 3, the thickening agent and the acid or acidic salt being together substantially water soluble.

In a second aspect, the present invention consists in a method of forming a thickened aqueous solution, comprising dissolving in water (a) at least one compound selected from the group consisting of acids and acidic salts, (b) a thickening agent which is at least one of the compounds selected from the group consisting of compounds of the formula:



in which R, R₁ and R₂ are as above defined. and optionally (c) a strong ionic salt, said thickening agent and the salts being together substantially water soluble, in amounts sufficient to produce a viscosity of not less than 30 mPa s at 25 °C when measured with a Brookfield RVT viscometer at 50 rpm using a No. 1 spindle.

In the context of this specification, substantially water soluble means that a thickening agent and an acid or acidic salt selected in accordance with the invention, will together either be soluble in water at 25 °C or at most will form a hazy solution that does not separate into two phases during normal storage.

It will be appreciated that the compositions of the present invention may be readily distinguished over those disclosed in the aforementioned patent application GB-A-2071688 (Jeyes Limited) in that the compositions claimed therein are directed towards substantially acid insoluble amines or amine oxides, which require a substantially acid soluble cationic or nonionic surfactant to achieve thickening.

By contrast the present invention is limited to amines which together with the selected acid or acidic salt are substantially water soluble, without a cationic or nonionic surfactant being required to achieve solution and thickening. It is also to be noted that in GB-A-2071688 it is stated that neither of the amine, cationic surfactant or nonionic surfactant alone with an aqueous solution of an inorganic acid or acid salt will cause thickening.

It will also be appreciated that the aforementioned US-A-4,021,377 (Borchert et al) does not disclose, nor does it suggest that thickening will occur in compositions envisaged by the present invention without recourse to heating the amine with citric acid to form various reaction products. The present inventor believes that the disclosure in this US patent that the reaction products of citric acid and an amine are viscous in solution was merely an observation by the inventors, and perhaps not unexpected in view of the high concentration of reactants employed. In fact, there is no disclosure in this US patent that the inventors are aware that levels of amines as low as those preferred and exemplified in the present invention will form thickened compositions with acid or acidic salt solutions. The real thrust of this patent is a method of producing a concentrated solution of desired reaction products which happen in this high concentration to be viscous.

In order to demonstrate this, the present inventor produced aqueous solutions containing 5% w/w citric acid anhydrous and 2% w/w mono-, di- or tri-ethanolamine. No thickening was noted in any of these solutions.

Similarly, in US-A-3,786,091 (Bolsing), it is taught that it is necessary to obtain the reaction products between the selected amine and phosphoric acid by heating them together to produce a paste.

Thus, Bolsing in the simplest embodiment of his invention disperses the selected amine in water, heats the dispersion to between 40°C and 100°C and then adds to it at least a neutralising amount of phosphoric acid, preheated to between 40°C and 120°C. Stirring is continued until the temperature falls to between 5°C and 25°C and the resultant composition is a paste consisting of the reaction products between phosphoric acid and selected amine. Bolsing also discloses that other acids such as sulphuric, hydrochloric, tartaric, oxalic, hydrofluoric and nitric may be used as an additive to a base paste of his invention. He further discloses that other amines may also be used as additives.

The present invention may be distinguished over Bolsing when it is considered that the amines of the Bolsing invention must be derivatives of substituted or unsubstituted hydrocarbons having 8-24 carbon atoms, the selected amine must be reacted by heating with phosphoric acid to achieve viscosity and there is no hint or suggestion that acids other than phosphoric acid are operative. Additionally, with respect to acidic salts, it is noted that Bolsing refers to ammonium chloride as an auxiliary.

In contrast, the present invention teaches that thickening can be achieved with a range of acids and acidic salts, no heating is required to obtain thickening and the present inventor believes that amines additional to those of Bolsing are operative.

In the above formula I the group R contains from 8 to 24 carbon atoms. Preferably the group R contains from 8 to 24 carbon atoms in an unsubstituted alkyl or alkenyl group.

Preferably, the group R₁ and R₂ are independently a hydrogen atom or a lower unsubstituted alkyl group, where lower refers to groups containing 1 to 4 carbon atoms or a substituted alkyl group. More preferably the groups R₁ and R₂ are independently a hydrogen atom or a lower unsubstituted alkyl group. Most preferably, the groups R₁ and R₂ are independently a hydrogen atom or a methyl group.

Preferred thickening agents of the present invention that are primary amines include Farmin O (Farmin is a registered trade mark of Kao Soap Co.) or Genamin OL-100D (Genamin is a registered trade mark of Hoechst), both of which are mainly oleylamine and Farmin T or Genamin TA100D, both of which are tallow fatty amine distilled. These thickening agents are able to thicken organic acids including formic, acetic, DL lactic, adipic, glycollic, malonic, succinic, pentetic, ascorbic, chloroacetic, citric and propionic acids. In some cases a small addition of a strong ionic salt such as sodium chloride is required to achieve adequate composition viscosity in the preferred concentration range of thickening agent. Naturally, increasing the concentration of thickening agent will increase viscosity in many cases. However, because of the relatively low cost of such salts, it is preferred to use a mixture of thickening agent and strong ionic salt to achieve the desired viscosity. However, it must also be considered that the addition of extra thickening agent may increase the pH and thereby decrease the efficiency of a composition.

Preferred thickening agents of the present invention that are tertiary amines include Genamin SO302D (dimethyl soya bean oil fatty amine distilled) and Genamin TA302D (dimethyl tallow fatty amine distilled). These amines are able to thicken organic acids including citric acid, L tartaric acid, formic acid, DL malic acid, acetic acid, DL lactic acid, adipic acid, maleic acid, ethylenediaminetetraacetic acid, glycollic, malonic, succinic and propionic acid and inorganic acids including sulfamic acid, phosphoric acid, boric, hydrofluoric and sulphuric acid. Generally, for reasons outlined above, these amines require the addition of a strong ionic salt, such as sodium chloride in order to achieve adequate composition viscosity in the preferred concentration range of thickening agent.

Preferred thickening agents of the present invention that are tertiary amines able to thicken acidic salts include Genamin TA302D and Genamin SO302D. Genamin TA302D is able to thicken aqueous solutions of monosodium citrate, and potassium hydrogen tartrate with the addition of a strong ionic salt such as sodium

chloride. Genamin SO302D is able to thicken aqueous solutions of aluminium sulphate, sodium hydrogen sulphate, sodium dihydrogen orthophosphate, disodium ethylenediaminetetraacetate and aluminium potassium sulphate with a small addition of a strong ionic salt such as sodium chloride required in some cases; the sodium chloride being required to achieve adequate composition viscosity as previously described.

5 Preferred thickening agents of the present invention that are primary amines able to thicken acidic salts include Farmin O, Genamin OL-100D, Farmin T and Genamin TA-100D. These amines are able to thicken aqueous solutions of aluminium acetate.

Other amines considered by the present inventor to be within the scope of this invention include:

Farmin DMON (Dimethyl oleylamine);
 10 Onamin® 1416 (N-alkyl C₁₄-C₁₆ dimethylamine)
 Genamin 14R302D (tetradecyl dimethylamine distilled);
 Genamin 16R302D (hexadecyl dimethylamine distilled);
 Genamin 14R100D (tetradecylamine distilled);
 Genamin 16R100D (hexadecylamine distilled);
 15 the following amines obtainable from KenoGard-
 Amine 2MOL (dimethyloleylamine)
 Amine 28 (dioctylamine)
 Amine 210 (didecylamine)
 Amine M28 (methyldioctylamine) and
 20 Amine M210 (methyldidecylamine).

It is to be noted that the abovementioned preferred amines are in fact mixtures of a number of amines with one amine being predominant. The present inventor believes that the predominant amine may function to solubilize the minor amines in compositions of the present invention.

For example, Farmin O is predominantly oleylamine having an approximate alkyl content of 6% C₁₄,
 25 13% C₁₆ and 81% C₁₈, whilst Genamin SO302D has an approximate average chain length distribution of 2% C₁₄, 15% C₁₆ and 83% C₁₈ and Genamin TA302D has an approximate average chain length distribution of 5% C₁₄, 30% C₁₆ and 65% C₁₈.

Additionally, amines of the invention may be generally derived from natural or synthetic sources of tallow, soya bean oil, oleic acid, palmitic acid, myristic acid, linoleic acid, linolenic acid, ricinoleic acid or
 30 hexadecanoic acid.

Generally the acids to which the present invention is directed include inorganic acids such as sulphuric, hydrofluoric, boric, sulphamic and phosphoric acids and the organic acids formic, acetic, DL lactic, propionic, citric, DL malic, L tartaric, adipic, maleic and ethylenediaminetetraacetic acid, malonic, glycollic, succinic, ascorbic, pentetic and chloroacetic acids.

35 The acidic salts to which the present invention is directed include the acid salts of inorganic or organic acids such as monosodium citrate, sodium hydrogen sulphate, sodium dihydrogen orthophosphate, disodium ethylenediaminetetraacetate, aluminium acetate and potassium hydrogen tartrate, aluminium sulphate and aluminium potassium sulphate.

The concentration of acid or acidic salt may be varied over a wide range depending on the end use of
 40 the composition. In some cases, particularly where a strong acid such as hydrofluoric acid is used and a near neutral product is required, the concentration of acid or acidic salt may be as low as 0.01% w/w.

In other cases, the concentration of acid or acidic salt may be in excess of 90%.

Generally, the concentration of acid or acidic salt will lie in the range of from 0.1 to 30% w/w.

In use, the thickening agent will be present in a concentration in the composition of from 0.1 to 10%
 45 w/w. Preferably, the concentration in the composition will lie in the range of from 0.4 to 5.0% w/w.

In order to achieve a desired viscosity in the composition, the concentration of the thickening agent may be varied appropriately. However, in some cases, it has been found that it is not possible to achieve sufficient composition viscosity for some applications. In such cases, the addition of a salt which has high ionic strength has been found to enhance the viscosity of these compositions. In most cases however, the
 50 concentration of thickening agent and high ionic strength salt will be optimized in order to produce a cost effective composition of the desired viscosity. Generally, the ionic salts will be selected from alkali metal halides or sulphates and ammonium halides or sulphates. Suitable such salts include sodium chloride, sodium sulphate, potassium sulphate, potassium chloride, ammonium chloride and the like.

Alternatively, the present inventor believes that certain long chain quaternary ammonium compounds
 55 may achieve similar thickening to the aforementioned salts. An example is Arquad 16-50 which is hexadecyltrimethyl ammonium chloride or Arquad S-50 which is a mixture of octadecanyl and octadecadienyl trimethyl ammonium chloride. Arquad is a trade mark of Armour Hess Chemicals.

It has further been found that in some cases whilst the composition is thick, clear and stable at room

temperature, in order to achieve a satisfactory upper and lower cloud point for a composition, it is necessary to add another ingredient such as salt with a strong ionic effect of the type mentioned above, a cationic, nonionic or amphoteric surfactant or a solvent miscible with the composition, for example ethanol, isopropanol, butyl lcionol and the like (Icionol is a trade mark of ICI) and Dowanol DPM (dipropyleneglycol methylether. Dowanol is a trade mark of Dow Chemicals). Such an addition of salt, surfactant or solvent
 5 insures that a composition will remain stable under hot and cold weather conditions.

A variety of other ingredients may be added to compositions of the invention depending on their end use. Thus, germicides, surfactants including anionic, nonionic, cationic and amphoteric, sequestering agents, corrosion inhibitors, perfumes and colouring agents may be added.

10 A principal advantage of the present invention is that an aqueous acid or acidic salt solution may be readily and easily thickened. Generally the steps of obtaining such thickened compositions will be - (a) add an appropriate amount of acid or acidic salt to water and stir to dissolve, (b) add a thickening agent of the present invention to the solution and stir until dissolved and (c) add other ingredients if required, stirring to dissolve.

15 It will be appreciated that since the thickening agent of the present invention is defined to be soluble in the selected acidic salt or acid solution, and as it will generally be easily wet, the step (b) above will be relatively rapid unlike many of the prior art thickening agents, which whilst they may be soluble are frequently difficult to wet.

Other advantages of the thickening agents of the present invention are that they are relatively
 20 inexpensive and in use produce smooth, homogeneous immediate thickening. Furthermore, thickened compositions are stable with respect to viscosity. For example, the present inventor has found that a citric acid composition thickened with Farmin O had no substantial change in viscosity when stored at room temperature for 12 months.

A still further advantage is that the present inventor has found that the compositions of the invention
 25 have some surfactant and corrosion inhibition properties. The former finding means that water immiscible substances such as fragrances may be directly solubilized in a composition of the invention without requiring the addition of emulsifiers or auxiliary solvents, and in compositions in which the surface active properties are required, potentially less or no additional surfactant would be required.

The present inventor has also found that if only sufficient of an acid or an acidic salt is present to just
 30 dissolve a thickening agent of the present invention, then a composition of near neutral pH may be obtained. Thus, Farmin O may be used to thicken lactic acid at a pH of 6.5. The advantage of this finding is that it may be used in aqueous liquid cleaners in general.

The present inventor has further found that an acid or acidic salt which is usually considered to be water insoluble at room temperature may be brought into solution through the use of a thickening agent of
 35 the present invention, with thickening occurring. The viscosity may be increased through the use of a strong ionic salt such as sodium chloride. To prepare such compositions, the acid is dispersed in the water and the thickening agent added with mixing. It is observed that as the acid and thickener go into solution, the solution increases in viscosity.

Preferred compositions of this type include ethylenediaminetetraacetic acid with Genamin SO302D as
 40 the thickening agent, potassium hydrogen tartrate with Genamin TA302D as thickening agent and pentetic acid with Farmin O as thickening agent.

Hereinafter are a number of examples, 1 to 55, of the present invention, together with comparative examples 1A and 1B, in which the viscosity, in mPa s, of each was determined using a Brookfield RVT viscometer using a spindle and speed as appropriate at 25 °C. Note that the thickening agent is asterixed in
 45 each case.

All of these examples (except Nos. 27, 46 and 51) were produced by bringing the acid or acidic salt into solution, adding the thickening agent and mixing until dissolved, and then adding the other ingredients with mixing until dissolved.

50 Examples 27, 46 and 51 were prepared by dispersing the acid or acid salt in water, adding the thickening agent and mixing until solution occurred, followed by sodium chloride (if required) until a satisfactory viscosity was achieved.

Note that all examples were prepared under normal laboratory conditions.

Example 1

		% w/w
5	Citric Acid Anhydrous	5.0
	* Farmin 0	1.8
	Water	93.2
10	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	670 mPa s
	pH	2.2

ComparativeExample 1A

15	Water Viscosity Spindle 1	Speed 20 rpm	:	3.5 mPa s
		Speed 50 rpm	:	6.5 mPa s
20	Spindle 2	Speed 20 rpm	:	0 mPa s
		Speed 50 rpm	:	5.5 mPa s

Example 1B

	Aqueous 5% w/w Citric Acid Anhydrous solution			
25	Viscosity Spindle 2	Speed 20 rpm	:	0 mPa s
		Speed 50 rpm	:	5.5 mPa s

Example 2

		% w/w
30	Citric Acid Anhydrous	5.0
	* Farmin 0	2.0
	Vantoc CL (Benzalkonium	
35	Chloride BP 50% w/v - Vantoc	
	is a trade mark of ICI)	2.2
	Sodium Chloride	0.7
40	Perfume	0.2
	Dye	0.005
	Water	89.9
45	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	54 mPa s
	pH	2.3

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Example 3

		% w/w
5	DL-Lactic Acid 88%	5.0
	* Farmin 0	2.0
	Sodium Chloride	0.3
10	Water	92.7
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	820 mPa s
15	pH	2.9

Example 4

		% w/w
20	DL-Lactic Acid 88%	5.0
	* Farmin 0	2.0
	Vantoc CL (Benzalkonium Chloride BP 50% w/v - Vantoc is a trade mark of ICI)	0.4
25	Sodium Chloride	0.35
	Perfume	0.2
30	Dye	0.005
	Water	92.05
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	530 mPa s
35	pH	2.9

Example 5

		% w/w
40	DL-Lactic Acid 88%	0.85
	* Farmin 0	2.0
	Sodium Chloride	0.1
45	Water	97.05
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	740 mPa s
50	pH	6.5

Example 6

		% w/w
5	Formic Acid 88%	4.1
	* Farmin 0	2.0
	Sodium Chloride	0.05
10	Water	93.85
	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	58 mPa s
15	pH	2.5

Example 7

		% w/w
20	Formic Acid 88%	4.1
	* Genamin TA100D	2.0
	Sodium Chloride	0.05
25	Water	93.85
	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	30 mPa s
30	pH	2.45

Example 8

		% w/w
35	Acetic Acid (Glacial)	4.7
	* Farmin 0	2.0
	Sodium Chloride	0.25
40	Water	93.05
	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	160 mPa s
45	pH	3.6

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Example 9

	% w/w
5 Acetic Acid (Glacial)	4.7
* Farmin 0	2.0
Vantoc CL (Benzalkonium	
10 Chloride BP 50% w/v - Vantoc	
is a trade mark of ICI	0.4
Sodium Chloride	0.35
Perfume	0.2
15 Dye	0.005
Water	92.35
Viscosity (Spindle No. 2,	
20 speed 50 rpm, at 25°C)	180 mPa s
pH	3.6

Example 10

	% w/w
25 Acetic Acid (Glacial)	4.7
* Genamin TA100D	2.0
30 Sodium Chloride	0.3
Water	93.0
Viscosity (Spindle No. 2,	
35 speed 20 rpm, at 25°C)	660 mPa s
pH	3.6

Example 11

	% w/w
40 Propionic Acid	5.8
* Farmin 0	2.0
45 Sodium Chloride	0.3
Water	91.9
Viscosity (Spindle No. 1,	
50 speed 50 rpm, at 25°C)	58 mPa s
pH	3.7

Example 12

		% w/w
5	Citric Acid Anhydrous	5.0
	* Genamin SO302D	2.0
	Sodium Chloride	2.0
10	Perfume	0.2
	Water	90.8
	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	220 mPa s
15	pH	2.35

Example 13

		% w/w
	Citric Acid Anhydrous	5.0
	* Genamin TA302D	2.0
25	Sodium Chloride	2.0
	Perfume	0.2
	Water	90.8
30	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	240 mPa s
	pH	2.35

Example 14

		% w/w
	L-Tartaric Acid	5.9
40	* Genamin SO302D	2.0
	Sodium Chloride	1.4
	Perfume	0.2
45	Dye	0.005
	Water	90.5
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	625 mPa s
50	pH	2.15

Example 15

		% w/w
5	L-Tartaric Acid	5.9
	* Genamin TA302D	2.0
	Sodium Chloride	1.4
	Perfume	0.2
10	Water	90.5
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	1065 mPa s
15	pH	2.1

Example 16

		% w/w
20	Formic Acid 88%	4.1
	* Genamin SO302D	2.0
	Sodium Chloride	1.3
25	Dye	0.005
	Water	92.6
	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	160 mPa s
30	pH	2.4

Example 17

		% w/w
	Formic Acid 88%	4.1
40	* Genamin TA302D	2.0
	Sodium Chloride	1.6
	Water	92.3
45	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	500 mPa s
	pH	2.5

Example 18

		% w/w
5	DL-Malic Acid	5.2
	* Genamin SO302D	2.0
	Sodium Chloride	1.6
10	Dye	0.005
	Water	91.2
	Viscosity (Spindle No. 1, speed 20 rpm, at 25°C)	97 mPa s
15	pH	2.45

Example 19

20		% w/w
	DL-Lactic Acid 88%	5.0
	* Genamin 16R302D	2.0
25	Sodium Chloride	2.0
	Perfume	0.2
	Dye	0.005
	Water	88.8
30	Viscosity (Spindle No. 1, speed 20 rpm, at 25°C)	100 mPa s
	pH	2.75

Example 20

		% w/w
40	Sulphamic Acid	7.6
	* Genamin SO302D	2.0
	Sodium Chloride	1.1
45	Water	89.3
	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	77 mPa s
50	pH	0.8

Example 21

		% w/w
5	Sulphamic Acid	7.6
	* Genamin TA302D	2.0
	Sodium Chloride	1.7
	Water	88.7
10	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	390 mPa s
	pH	0.9

Example 22

		% w/w
	Phosphoric Acid 85%	5.9
	* Genamin SO302D	2.0
20	Sodium Chloride	1.1
	Water	91.0
	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	170 mPa s
25	pH	1.35

Example 23

		% w/w
30	Phosphoric Acid 85%	5.9
	* Genamin TA302D	2.0
	Sodium Chloride	1.5
35	Water	90.6
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	395 mPa s
40	pH	1.35

Example 24

		% w/w
45	Sulphuric Acid conc.	3.83
	* Genamin SO302D	2.0
	Water	94.17
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	890 mPa s
50	pH	0.85

Example 25

		% w/w
	Sulphuric Acid conc.	3.83
5	* Genamin TA302D	2.0
	Water	94.2
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	375 mPa s
10	pH	0.9

Example 26

		% w/w
15	Monosodium Citrate	8.35
	* Genamin TA302D	2.0
	Sodium Chloride	2.0
20	Water	87.65
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	430 mPa s
	pH	3.75

Example 27

		% w/w
	Ethylenediaminetetraacetic Acid	0.8
30	* Genamin SO302D	2.0
	Sodium Chloride	1.7
	Water	95.5
35	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	730 mPa s
	pH	5.65

Example 28

		% w/w
	Al ₂ (SO ₄) ₃ · 16H ₂ O	6.7
	* Genamin SO302D	2.0
45	Sodium Chloride	0.3
	Water	91.0
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	390 mPa s
50	pH	3.65

Example 29

		% w/w
5	AlK (SO ₄) ₂ .12H ₂ O	10.0
	* Genamin SO302D	2.0
	Sodium Chloride	0.1
	Water	87.9
10	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	240 mPa s
	pH	3.75

Example 30

		% w/w
	Sodium Hydrogen Sulphate	9.5
20	* Genamin SO302D	2.0
	Water	88.5
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	1500 mPa s
25	pH	0.9

Example 31

		% w/w
30	Sodium Dihydrogen Orthophosphate Dihydrate	12.0
	* Genamin SO302D	2.0
	Water	86.0
35	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	585 mPa s
	pH	5.2

Example 32

		% w/w
	Adipic Acid	1.0
45	* Genamin SO302D	2.0
	Sodium Chloride	2.0
	Water	95.0
50	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	255 mPa s
	pH	4.55

Example 33

		% w/w
5	Adipic Acid	1.4
	* Farmin O	2.0
	Water	96.6
10	Viscosity (Spindle No. 2, speed 5 rpm, at 25°C)	4095 mPa s
	pH	3.95

Example 34

		% w/w
	Maleic Acid	1.0
20	* Genamin SO302D	2.0
	Sodium Chloride	0.5
	Water	96.5
25	Viscosity (Spindle No. 1, speed 20 rpm, at 25°C)	113 mPa s
	pH	2.6

Example 35

		% w/w
	Disodium	
35	Ethylenediaminetetraacetate	6.6
	* Genamin SO302D	2.0
	Sodium Chloride	1.7
40	Water	89.7
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	785 mPa s
45	pH	5.8

Example 36

		% w/w
5	DL-Lactic Acid 88%	8.0
	* Genamin TA100D	2.0
	Sodium Chloride	0.6
	Water	89.4
10	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	1255 mPa s
	pH	2.7

Example 37

15		% w/w
	Formic Acid 88%	4.1
	* Farmin O	2.0
	Vantoc CL (Benzalkonium Chloride BP 50% w/v - Vantoc is a trade mark of ICI	0.4
20	Sodium Chloride	0.15
	Perfume	0.2
25	Dye	0.005
	Water	93.15
	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	89 mPa s
30	pH	2.5

Example 38

35		% w/w
	Formic Acid 88%	5.5
	* Farmin O	2.0
	Vantoc CL (Benzalkonium Chloride BP 50% w/v - Vantoc is a trade mark of ICI	0.4
40	Sodium Chloride	0.2
	Perfume	0.2
45	Dye	0.005
	Water	91.7
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	450 mPa s
50	pH	2.05

Example 39

		% w/w
5	Glycollic Acid 70%	8.5
	* Farmin O	2.0
	Sodium Chloride	0.2
	Water	89.3
10	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	660 mPa s
	pH	2.5

Example 40

		% w/w
	Glycollic Acid 70%	8.5
20	* Genamin SO 302D	2.0
	Sodium Chloride	1.8
	Water	87.7
25	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	290 mPa s
	pH	2.3

Example 41

30		% w/w
	Malonic Acid	4.0
	* Farmin O	2.0
	Water	94.0
35	Viscosity (Spindle No.2, speed 50 rpm, at 25°C)	185 mPa s
	pH	2.0

Example 42

40		% w/w
	Malonic Acid	4.0
45	* Genamin SO 302D	2.0
	Sodium Chloride	1.6
	Water	92.4
50	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	69 mPa s
	pH	1.9

Example 43

		% w/w
5	Succinic Acid	4.6
	* Farmin O	2.0
	Sodium Chloride	0.1
	Water	93.3
10	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	230 mPa s
	pH	3.1

Example 44

		% w/w
	Succinic Acid	4.6
20	* Genamin SO 302D	2.0
	Sodium Chloride	2.4
	Water	91.0
25	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	105 mPa s
	pH	3.1

Example 45

		% w/w
30	L(+)-Ascorbic Acid	13.75
	* Farmin O	2.0
	Sodium Chloride	0.5
35	Water	83.75
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	705 mPa s
40	pH	2.9

Example 46

		% w/w
45	D.T.P.A. (Pentetic Acid)	1.3
	* Farmin O	2.0
	Water	96.7
50	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	1185 mPa s
	pH	3.2

55

Example 47

		% w/w
5	Chloroacetic Acid	8.6
	* Farmin O	2.0
	Water	89.4
10	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	96 mPa s
	pH	1.7

Example 48

		% w/w
	Hydrofluoric Acid 50%	3.1
	* Genamin SO 302D	2.0
20	Sodium Chloride	0.6
	Water	94.3
	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C)	370 mPa s
25	pH	1.2

Example 49

		% w/w
30	Boric Acid	5.0
	* Genamin SO 302D	2.0
	Sodium Chloride	1.4
35	Water	91.6
	Viscosity (Spindle No. 1, speed 20 rpm, at 25°C)	280 mPa s
40	pH	6.2

Example 50

		% w/w
45	Aluminium Acetate	5.3
	* Farmin O	2.0
	Water	92.7
	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C)	1055 mPa s
50	pH	5.2

Example 51

		% w/w
5	Potassium Hydrogen Tartrate	1.1
	* Genamin TA 302D	2.0
	Sodium Chloride	0.7
	Water	96.2
10	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C)	78 mPa s
	pH	6.3

15

20

25

30

35

40

45

50

55

Example 52

		% w/w
5	Sulphuric Acid conc.	3.83
	* Genamin 14R302D	1.00
	* Genamin 16R302D	1.00
10	Sodium Chloride	3.00
	Water	91.17
	Viscosity (Spindle No. 1, speed 20 rpm, at 25°C) pH	212 mPa s

Example 53

		% w/w
20	Sulphuric Acid conc.	7.7
	* Genamin 16R302D	2.0
	Water	90.3
25	Viscosity (Spindle No. 2, speed 20 rpm, at 25°C) pH	556 mPa s

Example 54

		% w/w
30	Hydrochloric acid 30% technical	9.5
	* Genamin 14R302D	2.0
35	Sodium Chloride	3.0
	Water	85.5
40	Viscosity (Spindle No. 1, speed 50 rpm, at 25°C) pH	105 mPa s

Example 55

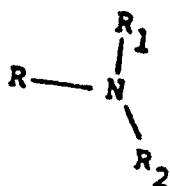
		% w/w
45	Hydrochloric acid 30% technical	53.0
	* Genamin TA302D	2.0
	Water	45.0
50	Viscosity (Spindle No. 2, speed 50 rpm, at 25°C) pH	380 mPa s

It is to be noted that the viscosity of Example 1, when compared with the viscosity of water (1A) and 5% w/w citric acid (1B), is substantially greater. A comparison with an aqueous solution of the thickening agent in this case was not possible as the thickening agent is water insoluble.

The examples 1 to 55 disclosed herein may be used for example as toilet bowl cleaners, metal cleaners and brighteners and the like as well as applications such as gel batteries.

Claims

1. A thickened aqueous liquid toilet bowl cleansing composition having a pH of not more than 6.5 and having a viscosity of not less than 30 mPa s at 25 °C when measured with a Brookfield RVT viscometer at 50 rpm using a No. 1 spindle, which composition comprises at least one acid or acidic salt, optionally a strong ionic salt, and, as the sole organic agent to thicken the composition and impart said viscosity to the composition in an amount of from 0.1 to 10% w/w, at least one compound of the formula:



(I)

- in which R contains 8 to 24 carbon atoms and is a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, R₁ is hydrogen, a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, R₂ is hydrogen, a substituted or unsubstituted alkyl, aryl, alkaryl, aralkyl or alkenyl group, provided that if either R, R₁ or R₂ is an alkyl or alkenyl group derived from a fatty acid obtained from a natural oil or fat or an equivalent synthetic fatty acid, or is an alkaryl group containing from 8 to 12 carbon atoms in the alkyl moiety, then the other substituents are not respectively of the formulae: [A]_x - H and [A]_y - H, where A is either ethoxy or propoxy and x, y are independently 1, 2 or 3, the thickening agent and the acid or acidic salt being together substantially water soluble.
2. A composition as claimed in claim 1 wherein the thickening agent is water insoluble.
3. A composition as claimed in claim 1 or claim 2 wherein the group R is a substituted or unsubstituted alkyl or alkenyl group.
4. A composition as claimed in claim 3 wherein R is derived from either a natural or synthetic source of tallow, soya bean oil, oleic acid, palmitic or myristic acid.
5. A composition as in claim 3 wherein R is derived from either a natural or synthetic source of linolenic, ricinoleic, linoleic or hexadecanoic acid.
6. A composition as claimed in any one of the preceding claims wherein the groups R₁ and R₂ are independently a hydrogen atom, a lower unsubstituted alkyl group containing one to four carbon atoms, preferably methyl, or a substituted alkyl group.
7. A composition as claimed in any one of the preceding claims wherein the thickening agent is a mixture of compounds of the Formula I.
8. A composition as claimed in any one of the preceding claims wherein the acid is phosphoric, sulphuric, boric, sulphamic, tartaric, citric, lactic, formic, acetic, glycollic, pentetic, ethylenediaminetetraacetic, propionic, malic, adipic, maleic, malonic, succinic, hydrofluoric, ascorbic or chloroacetic acid.
9. A composition as claimed in any one of the preceding claims wherein the acidic salt is monosodium citrate, sodium hydrogen sulphate, sodium dihydrogen orthophosphate, disodium ethylenediaminetetraacetate, aluminium potassium sulphate, aluminium acetate, potassium hydrogen tartrate or aluminium sulphate.
10. A composition as claimed in any one of the preceding claims wherein the concentration of thickening agent is in the range of from 0.1 to 10% w/w, preferably 0.4 to 5.0% w/w.

11. A composition as claimed in any one of the preceding claims wherein the concentration of acid or acidic salt is not less than 0.01% w/w, preferably 0.1 to 30% w/w.
12. A composition claimed as in any one of the preceding claims additionally including a perfume, dye, sequestering agent, surfactant or bactericide.
13. A composition as claimed in any one of the preceding claims wherein the strong ionic salt is an alkali metal halide, an alkali metal sulphate, an ammonium halide, ammonium sulphate or a long chain quaternary ammonium compound.
14. A composition as claimed in any one of the preceding claims further including a compound effective in adjusting the upper and/or lower cloud point of the composition, preferably a strong ionic salt, anionic surfactant, cationic surfactant, nonionic surfactant, amphoteric surfactant, a solvent miscible with the composition, or a mixture thereof.
15. A composition as claimed in claim 14 wherein the solvent is ethanol, isopropanol, butoxyethanol or dipropylene glycol methylether.
16. A method of forming a composition as claimed in any one of the preceding claims comprising dissolving in water (a) at least one acid or acidic salt, (b) a thickening agent which is as defined in claim 1, and optionally (c) a strong ionic salt, the thickening agent and the acid or acidic salts being together substantially water soluble, in amounts sufficient to produce a viscosity of not less than 30 mPa s at 25 °C when measured with a Brookfield RVT viscometer at 50 rpm using a No. 1 spindle.

Revendications

1. Composition liquide aqueuse épaissie pour le nettoyage de cuvettes de W.C, dont le pH ne dépasse pas 6,5 et dont la viscosité n'est pas inférieure à 30 mPa.s à 25 °C, mesurée avec un viscosimètre Brookfield RVT à 50 tr/min avec utilisation d'une broche n° 1, cette composition comprenant au moins un acide ou un sel acide, facultativement un sel ionique fort et, comme unique agent organique servant à épaissir la composition et à conférer à cette dernière ladite viscosité, en une quantité de 0,1 à 10 % en poids/poids, au moins un composé de formule :



dans laquelle R contient 8 à 24 atomes de carbone et est un groupe alkyle, aryle, alkaryle, aralkyle ou alcényle substitué ou non substitué, R₁ est l'hydrogène, un groupe alkyle, aryle, alkaryle, aralkyle ou alcényle substitué ou non substitué, R₂ est l'hydrogène, un groupe alkyle, aryle, alkaryle, aralkyle ou alcényle substitué ou non substitué, sous réserve que si R, R₁ ou R₂ est un groupe alkyle ou alcényle dérivé d'un acide gras tiré d'une huile ou d'une graisse naturelle ou d'un acide gras synthétique équivalent, ou s'il s'agit d'un groupe alkaryle contenant 8 à 12 atomes de carbone dans la portion alkyle, les autres substituants ne répondent alors respectivement pas aux formules : [A]_x - H et [A]_y - H, où A est un groupe éthoxy ou propoxy et x, y représentent indépendamment les nombres 1, 2 ou 3, l'agent épaississant et l'acide ou le sel d'acide étant ensemble pratiquement solubles dans l'eau.

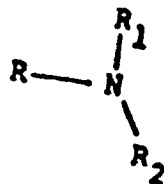
2. Composition suivant la revendication 1, dans laquelle l'agent épaississant est insoluble dans l'eau.
3. Composition suivant la revendication 1 ou la revendication 2, dans laquelle le groupe R est un groupe alkyle ou un groupe alcényle substitué ou non substitué.
4. Composition suivant la revendication 3, dans laquelle R est dérivé d'une source naturelle ou synthétique de suif, d'huile de graines de soja, d'acide oléique, d'acide palmitique ou d'acide myristique.

5. Composition suivant la revendication 3, dans laquelle R est dérivé d'une source naturelle ou synthétique d'acide linoléique, d'acide ricinoléique, d'acide linoléique ou d'acide hexadécanoïque.
6. Composition suivant l'une quelconque des revendications précédentes, dans laquelle les groupes R₁ et R₂ représentent indépendamment un atome d'hydrogène, un groupe alkyle inférieur non substitué contenant un à quatre atomes de carbone, de préférence le groupe méthyle, ou un groupe alkyle substitué.
7. Composition suivant l'une quelconque des revendications précédentes, dans laquelle l'agent épaississant est un mélange de composés de formule I.
8. Composition suivant l'une quelconque des revendications précédentes, dans laquelle l'acide est l'acide phosphorique, l'acide sulfurique, l'acide borique, l'acide sulfamique, l'acide tartrique, l'acide citrique, l'acide lactique, l'acide formique, l'acide acétique, l'acide glycolique, l'acide pentétique, l'acide éthylène-diaminetétraacétique, l'acide propionique, l'acide malique, l'acide adipique, l'acide maléique, l'acide malonique, l'acide succinique, l'acide fluorhydrique, l'acide ascorbique ou l'acide chloracétique.
9. Composition suivant l'une quelconque des revendications précédentes, dans laquelle le sel acide est le citrate monosodique, l'hydrogénosulfate de sodium, le dihydrogène-orthophosphate de sodium, l'éthylène-diaminetétraacétate disodique, le sulfate d'aluminium et de potassium, l'acétate d'aluminium, l'hydrogénotartrate de potassium ou le sulfate d'aluminium.
10. Composition suivant l'une quelconque des revendications précédentes, dans laquelle la concentration de l'agent épaississant se situe dans la plage de 0,1 à 10 % en poids/poids, de préférence de 0,4 à 5,0 % en poids/poids.
11. Composition suivant l'une quelconque des revendications précédentes, dans laquelle la concentration en acide ou en sel acide n'est pas inférieure à 0,01 % en poids, étant de préférence comprise dans la plage de 0,1 à 30 % en poids/poids.
12. Composition suivant l'une quelconque des revendications précédentes, comprenant en outre un parfum, un colorant, un agent séquestrant, un surfactant ou un bactéricide.
13. Composition suivant l'une quelconque des revendications précédentes, dans laquelle le sel ionique fort est un halogénure de métal alcalin, un sulfate de métal alcalin, un halogénure d'ammonium, un sulfate d'ammonium ou un composé d'ammonium quaternaire à longue chaîne.
14. Composition suivant l'une quelconque des revendications précédentes, comprenant en outre un composé efficace pour ajuster le point de trouble supérieur et/ou inférieur de la composition, de préférence un sel ionique fort, un surfactant ionique, un surfactant cationique, un surfactant non ionique, un surfactant amphotère, un solvant miscible à la composition, ou un mélange de ces composés.
15. Composition suivant la revendication 14, dans laquelle le solvant est l'éthanol, l'isopropanol, le butoxyéthanol ou l'éther méthylique du dipropylèneglycol.
16. Procédé de préparation d'une composition suivant l'une quelconque des revendications précédentes, qui consiste à dissoudre dans l'eau (a) au moins un acide ou un sel acide, (b) un agent épaississant qui est tel que défini dans la revendication 1, et, à titre facultatif, (c) un sel ionique fort, l'agent épaississant et l'acide ou les sels acides étant ensemble pratiquement solubles dans l'eau, en des quantités suffisantes pour produire une viscosité non inférieure à 30 mPa.s à 25 °C lorsqu'elle est mesurée avec un viscosimètre Brookfield RVT à 50 tr/min utilisant une broche n° 1.

Ansprüche

1. Verdickte, wäßrige, flüssige Toilettenschüssel-Reinigungszusammensetzung, die einen pH von nicht mehr als 6,5 und eine Viskosität von nicht weniger als 30 mPa.s bei 25 °C aufweist, wenn mit einem Brookfield RVT Viskosimeter bei 50 Upm unter Verwendung einer Spindel Nr. 1 gemessen wird, wobei die Zusammensetzung mindestens eine Säure oder ein saures Salz, gegebenenfalls ein stark ionisches

Salz, und als das einzige organische Mittel, um die Zusammensetzung zu verdicken und der Zusammensetzung die Viskosität zu verleihen, in einer Menge von 0,1 bis 10% (Gew./Gew.) mindestens eine Verbindung der Formel



(I)

enthält, worin R 8 bis 24 Kohlenstoffatome enthält und eine substituierte oder unsubstituierte Alkyl-, Aryl-, Alkaryl-, Aralkyl- oder Alkenylgruppe ist, R₁ Wasserstoff, eine substituierte oder unsubstituierte Alkyl-, Aryl-, Alkaryl-, Aralkyl- oder Alkenylgruppe ist, R₂ Wasserstoff, eine substituierte oder unsubstituierte Alkyl-, Aryl-, Alkaryl-, Aralkyl- oder Alkenylgruppe ist, vorausgesetzt, daß wenn entweder R, R₁ oder R₂ eine Alkyl- oder Alkenylgruppe ist, welche von einer Fettsäure, die aus einem natürlichen Öl oder Fett erhalten wird, oder einer äquivalenten synthetischen Fettsäure stammt, oder eine Alkarylgruppe ist, die von 8 bis 12 Kohlenstoffatome in der Alkylkomponente enthält, die anderen Substituenten dann jeweils nicht von den Formeln [A]_x-H und [A]_y-H sind, worin A entweder Ethoxy oder Propoxy ist, und x,y unabhängig 1, 2 oder 3 sind, wobei das Verdickungsmittel und die Säure oder das saure Salz zusammen im wesentlichen wasserlöslich sind.

2. Zusammensetzung nach Anspruch 1, worin das Verdickungsmittel wasserunlöslich ist.
3. Zusammensetzung nach Anspruch 1 oder 2, worin die Gruppe R eine substituierte oder unsubstituierte Alkyl- oder Alkenylgruppe ist.
4. Zusammensetzung nach Anspruch 3, worin R entweder aus einer natürlichen oder synthetischen Quelle von Talg, Sojabohnenöl, Ölsäure, Palmitin- oder Myristinsäure stammt.
5. Zusammensetzung nach Anspruch 3, worin R entweder aus einer natürlichen oder synthetischen Quelle von Linolen-, Ricinol-, Linol- oder Hexadecansäure stammt.
6. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin die Gruppen R₁ und R₂ unabhängig ein Wasserstoffatom, eine niedere unsubstituierte Alkylgruppe mit einem bis vier Kohlenstoffatomen, vorzugsweise Methyl, oder eine substituierte Alkylgruppe ist.
7. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin das Verdickungsmittel ein Gemisch von Verbindungen der Formel I ist.
8. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin die Säure Phosphor-, Schwefel-, Bor-, Sulfamid-, Wein-, Zitronen-, Milch-, Ameisen-, Essig-, Glycol-, Diethylentriaminpentaessig-(pentetic acid), Ethylendiamintetraessig-, Propion-, Äpfel-, Adipin-, Malein-, Malon-, Bernstein-, Fluorwasserstoff-, Ascorbin- oder Chloressigsäure ist.
9. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin das saure Salz Mononatrium-Citrat, NatriumHydrosulfat, Natrium-Dihydrogenorthophosphat, Dinatrium-Ethylendiamintetraacetat, Aluminiumkaliumsulfat, Aluminiumacetat, Kalium-Hydrogentartrat oder Aluminiumsulfat ist.
10. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin die Konzentration des Verdickungsmittels im Bereich von 0,1 bis 10% (Gew./Gew.), vorzugsweise 0,4 bis 5,0% (Gew./Gew.) ist.
11. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin die Konzentration von Säure oder saurem Salz nicht weniger als 0,01% (Gew./Gew.), vorzugsweise 0,1 bis 30% (Gew./Gew.) ist.
12. Zusammensetzung nach einem der vorhergehenden Ansprüche, die zusätzlich ein Parfüm, einen

Farbstoff, ein Maskierungsmittel, ein oberflächenaktives Mittel oder ein Bakterizid enthält.

- 5 13. Zusammensetzung nach einem der vorhergehenden Ansprüche, worin das stark ionische Salz ein Alkalimetallhalogenid, ein Alkalimetallsulfat, ein Ammoniumhalogenid, Ammoniumsulfat oder eine langkettige quaternäre Ammoniumverbindung ist.
- 10 14. Zusammensetzung nach einem der vorhergehenden Ansprüche, weiterhin beinhaltend eine Verbindung, die wirksam beim Einstellen des oberen und/oder unteren Trübungspunkts der Zusammensetzung ist, vorzugsweise ein stark ionisches Salz, ein anionisches oberflächenaktives Mittel, ein kationisches oberflächenaktives Mittel, ein nichtionisches oberflächenaktives Mittel, ein amphoterer oberflächenaktives Mittel, ein mit der Zusammensetzung mischbares Lösungsmittel oder ein Gemisch davon.
- 15 15. Zusammensetzung nach Anspruch 14, worin das Lösungsmittel Ethanol, Isopropanol, Butoxyethanol oder Dipropylenglycolmethylether ist.
- 20 16. Verfahren zur Herstellung einer Zusammensetzung nach einem der vorhergehenden Ansprüche, umfassend das Lösen in Wasser von (a) mindestens einer Säure oder einem sauren Salz, (b) einem Verdickungsmittel, das wie in Anspruch 1 definiert ist, und gegebenenfalls (c) einem stark ionischen Salz, wobei das Verdickungsmittel und die Säure oder sauren Salze zusammen in Wasser im wesentlichen löslich sind, in Mengen, die ausreichen, um eine Viskosität von nicht weniger als 30 mPa·s bei 25 °C zu erzeugen, wenn mit einem Brookfield RVT Viskosimeter bei 50 Upm unter Verwendung einer Spindel Nr. 1 gemessen wird.

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