

(19)



(11)

EP 2 851 417 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

10.01.2018 Bulletin 2018/02

(51) Int Cl.:

C11D 1/825 (2006.01) **C11D 1/83** (2006.01)
C11D 1/835 (2006.01) **C11D 17/00** (2006.01)
C11D 1/29 (2006.01) **C11D 1/72** (2006.01)
C11D 3/20 (2006.01) **C11D 3/37** (2006.01)
C11D 3/50 (2006.01)

(21) Application number: **14185156.8**

(22) Date of filing: **17.09.2014**

(54) **Toilet solid block**

Toilettenreiniger in Stückform

Bloc détergent pour toilettes

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **18.09.2013 IT MI20131535**

(43) Date of publication of application:

25.03.2015 Bulletin 2015/13

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Description

5 [0001] The present invention relates to a solid toilet block. It is comprised in the technical field of detergent and/or perfuming and/or sanitizing products, in the solid form, to be applied onto the internal wall of sanitary appliances such as toilet bowls, bidet, washbasins, pissoirs.

[0002] Many solid toilet blocks provided with detergent and/or perfuming and/or sanitizing properties are known and subject-matter of wide marketing.

10 [0003] Said blocks are capable to provide an effective cleansing, disinfecting and/or perfuming treatment of the toilet bowl, thanks to the use of a solid block, containing the various active ingredients of interest, slowly dissolving to rinsing water flushing.

[0004] Within the solid toilet products of the rim-block type, applied onto the surface of interest by means of appropriate hooks or plastic cages, it is increasingly felt the need of products capable to exert multiple actions (detergent, perfuming, sanitizing) for a great number of water flushing operations, keeping at the same time a pleasant aesthetic appearance for the user. The need to achieve a product capable to exert a multiplicity of actions necessarily implies also the identification of a formulation in which the several active components are physically and chemically compatible with each other.

15 [0005] The solid blocks are, in general, a product particularly attractive from a point of view of lasting in time, thanks to the presence of components which, adjusting the dissolution, allow a gradual and slow release of the various components constituting the block itself. Moreover, they are particularly interesting as they combine a long lasting, with production and marketing costs absolutely advantageous with respect to other similar products.

20 [0006] Many and several approaches have been adopted over the time to control the consumption of the solid blocks: for example, a possible solution is represented by the presence of active components having a limited solubility in the flushing rinsing water.

[0007] To this end, the formulations of the toilet blocks according to the state of the art, usually contain, additional to surfactants and to minor components such as perfume, colorants, possible whiteners based on oxygen or chlorine, also significant amounts of inert fillers, which are usually inorganic fillers such as sodium sulfate or sodium carbonate. The fillers have the purpose both to modulate consumption, and to give the proper texture to the formulation, allowing to adjust the amount of the total active components.

25 [0008] The use of high quantities of fillers implies however some drawbacks during use of the solid toilet blocks contained therein.

30 [0009] First of all, at each water flushing, one part of the filler contained into the toilet block dissolves and re-crystallizes on the walls of the toilet bowl: this leads to the formation of typical white and unpleasant deposits on the surface of the sanitary appliance, constituted in fact by sodium sulfate or sodium carbonate.

[0010] Moreover, the use of high quantities of inert filler has a significant impact on the sustainability of the final product.

35 [0011] The weight of the solid block thus formulated is mostly due to the presence of high quantities of filler itself, with a considerable increase of costs to move an inert product during the transportation of the finished toilet block, with a consequent increase of production of CO₂ per piece.

[0012] Moreover it is apparent that, in the price of the end-product, namely of the toilet block purchased by the consumer, is comprised the cost of materials which, for most, do not give any contribution to the perfuming/detergent/sanitizing properties of the toilet block.

40 [0013] Another element that should be remembered with reference to the solid toilet blocks of the state of the art, containing high quantities of fillers, is that they are characterized by a matt appearance, aesthetically less pleasant and less appealing for the consumer with respect, for example, to multilayer/phases blocks, where at least one of such phases is translucent, as it is achieved with a transparent gel. Toilet blocks having a translucent appearance have increasingly found much favour with the consumers from an aesthetic point of view, ensuring also a better perfuming action, when the layer of gel is composed by the components of the formulation which give, in fact, the scent.

45 [0014] The evolution of the product in that direction led to develop toilet blocks which provide a solid phase and a gel phase. They however present the drawback to be generally characterized by particularly complicated production processes.

50 [0015] For example, the prior document GB 1,465,475 discloses a solid toilet block not dissolving quickly when placed in contact with water. The fundamental element of GB 1,465,475 is the presence of an amount comprised between 60 and 95% by weight of a hydrophobic biodegradable agent, slowing the dissolution of the tablet, said biodegradable hydrophobic material being selected from alkanolamides of fatty acids, ethoxylated fatty acids or ethoxylated fatty alcohols having a number of carbon atoms ranging from 10 to 22 and with a number of units of ethylene oxide varying from 8 to 15 units per mole.

55 [0016] The applicant has now surprisingly found a solid toilet block which overcomes the drawbacks of the state of the art as previously highlighted.

[0017] The main purpose of the present invention is therefore that of finding a solid toilet block which ensures, at the same time, a particular combination of features and specifically: a plurality of actions, an aesthetic aspect particularly

appealing for the consumer, a long lasting for a high number of flushing operations, without release of residual elements attaching to the walls of the sanitary object during use, and that it can be achieved through extremely simple methods.

[0018] The purpose of the present invention is therefore that of identifying a solid toilet block which, when applied onto the sanitary object and subjected to contact with rinsing water, gets and maintains a transparent appearance, with an unquestionable aesthetic advantage for the consumer.

[0019] A purpose of the present invention is also that of achieving a solid toilet block which, along with optimal appearance and lasting, presents an improved formulation allowing a plurality of actions and avoid formation of residues due to re-crystallization of fillers on the walls of the sanitary object during use. Subject-matter of the present invention is a toilet block having a formulation comprising

- a non-ionic surfactant selected from one or more polyalkylethers, in an amount ranging from 85 to 95%, preferably from 91 to 93%, by weight with respect to the total weight of the block; wherein said non-ionic surfactant includes a linear or branched alkyl chain, preferably linear, with a number of carbon atoms greater than or equal to 10, and even more preferably comprised between 12 and 22; and wherein said non-ionic surfactant has a number of moles of ethylene oxide per molecule greater than 15, even more preferably greater than 30;
- a perfuming agent in an amount ranging from 2 to 10%, preferably from 3 to 5%, by weight with respect to the total weight of the block;
- a polyalcohol, with a number of carbon atoms preferably less than 5, or a polyether liquid at room temperature, in an amount ranging from 0.1 to 3%, preferably from 1.5 to 2.5%, by weight with respect to the total weight of the block;
- a foaming agent selected from the classes of anionic and/or non-ionic and/or cationic and/or amphoteric surfactants, in an amount ranging from 1 to 3%, preferably from 1.5 to 2.5%, by weight with respect to the total weight of the block;
- water in an amount ranging from 0.1 to 0.5%, preferably from 0.2 to 0.3%, by weight with respect to the total weight of the block;

said formulation including an inorganic or organic filler, in an amount less than 10% by weight, still more preferably said formulation not including any inorganic or organic filler.

[0020] A further purpose of the present invention is a method of production of the toilet block providing the production of the block by extrusion, molding or melting and/or pouring of mixture of components constituting said solid toilet block.

[0021] The present invention relates also to a device for the cleansing/sanitizing/perfuming of the toilet bowl suitable for hanging onto the edge of the bowl by means of a support for the toilet block subject-matter of the present invention. Said support can be composed of a hook directly applied onto the toilet block, of a plastic cage or other similar solution.

[0022] The toilet block according to the present invention comprises as main component a non-ionic surfactant in an amount ranging from 85 to 95%, preferably from 91 to 93%, by weight with respect to the total weight of the block.

[0023] The percentages by weight indicated in the present text are all percentages by weight with respect to the total weight of the solid block, before it is put in use. Preferably the non-ionic surfactant is a mixture of polyalkylethers, with a linear alkyl chain having a number of carbon atoms comprised between 12 and 22 and having a number of moles of ethylene per molecule greater than 30.

[0024] Still more preferably it is a mixture of oleyl and cetyl alcohols ethoxylates 55 moles EO in an amount ranging from 91 to 93%, more preferably from 91 to 92% by weight with respect to the total weight of the block.

[0025] The perfuming agent is present, in the toilet block according to the present invention, in an amount ranging from 2 to 10%, preferably from 3 to 5%, and still more preferably it is equal to 4% by weight with respect to the total weight of the block. Such a perfuming agent can have a natural or synthetic origin. In the toilet block according to the present invention the polyalcohol is preferred with respect to polyether and it is preferably selected from glycerol, ethylene glycol and propylene glycol, in an amount ranging from 0,1 to 3%, preferably from 1,5 to 2,5%, by weight with respect to the total weight of the block. The glycerol can be glycerol of natural, synthetic or semi-synthetic origin.

[0026] The polyether is preferably a polyethylenglycol liquid at room temperature (20-25°C).

[0027] In the toilet block according to the present invention a foaming agent is also present, selected from anionic and/or non-ionic and/or cationic and/or amphoteric surfactants, preferably laurylether sodium sulfate (or sodium les 2 EO), said agent being present in an amount ranging from 1 to 3%, preferably from 1,5 to 2,5%, still more preferably equal to 2% by weight with respect to the total weight of the block.

[0028] The own specific non-ionic surfactants of the toilet block according to the present invention confer a good foaminess to the composition, obtaining a good cleansing effect and a good foam profile, without damaging the gel structure.

[0029] The filler, when present, is selected from an inorganic filler, such as for example silica, salts of alkali and/or alkaline-earth metals, clays and/or zeolites, or an organic filler, both in the form of salt and in the molecular form, such as for example sucrose and/or xylitol. Said filler being preferably an inorganic filler such as sodium sulfate or sodium carbonate.

[0030] The formulation of the toilet block according to the present invention can also provide, as minority components,

colorants with the objective to confer a more pleasing appearance to the block, and/or preservatives and/or sanitizing agents, selected from those commonly known to the skilled person in the art. The solid block according to the present invention preferably provides the following formulation consisting of oleyl or cetyl alcohols ethoxylates 55 moles EO;

a perfuming agent;
 glycerol;
 sodium lauryl ether sulfate;
 colorant;
 water.

[0031] Still more preferably, the solid block according to the present invention consists of 91,75% by weight of mixture of oleyl and cetyl alcohols ethoxylates 55 moles, 4% by weight of perfuming agent, 2% by weight of sodium les 2 EO (sliding pasta at 70%), 2% by weight of glycerol, 0.008% by weight of colorant and 0.242% by weight of water. The percentages are all percentages by weight with respect to the total weight of the solid block.

[0032] A main advantage of the solid toilet block according to the present invention is connected with the special formulation thereof which, with a much reduced content of filler or filler-free, allows to achieve a block with a weight of about 30 g, a number of flushing operations at least 20% greater than a block with a weight of 35-40 g of the state of the art.

[0033] Moreover, still thanks to the special formulation of the block itself, which substantially reduces or excludes the presence of fillers, the deposits onto the surface of the sanitary object, which are due to the re-crystallization of the filler during use, are completely eliminated.

[0034] At last, a further much important advantage is the particular formulation of the solid block according to the present invention which allows to achieve a matt solid product which, as soon as put in use and hit by the flushing water, adsorbs water, hydrates and the surface layer transforms into a gel, with a consequent transparent appearance.

[0035] The adsorption of water goes on up to when the whole structure of the solid block turns into a gel (about 150 flushing operations), allowing thus not only to obtain a more pleasant aesthetic appearance, but also allowing the user to monitor the functioning of the block which hydrates and releases active ingredients for its whole life time.

[0036] A further advantage of the solid block according to the present invention is connected with the easiness of production thereof: indeed, it can be obtained through whichever known method for the achievement of a solid block, as for example extrusion, moulding, melting and subsequent pouring, substantially obtaining whichever form.

[0037] Thanks to the specific formulation, the solid toilet block thus achieved, once put in use, modifies and, by hydration, turns into a gel.

[0038] The toilet block swells by adsorbing water (documented by the increase of weight in the first few days), thus making the active components pre-dissolved and available.

[0039] Then the toilet block according to the present invention presents a particular formulation that ensures at the same time a slow dissolution, hydration to form the gel and pre-dissolution of active components that are so readily available.

[0040] The preferred process for preparing a solid toilet block according to the present invention comprises the following phases:

- all the components of the formulation of the solid block according to the present invention, are mixed at room temperature for a variable time from 45 to 120 minutes;
- the extrudable stuff thus obtained is then extruded in the desired form.

[0041] In the case in which the solid block according to the present invention provides a hook directly applied to the same for the application onto the wall of the sanitary object, the moulding of the block may occur directly about such a hook, which results thus inserted into the structure of the same solid block.

[0042] In the case of extrusion, it can be carried out through a proper head of extrusion allowing to achieve the seat for the same hook.

[0043] The toilet block according to the present invention can be thus applied at a peripheral edge of a sanitary bowl or WC through a hook directly inserted in the same body of the block or through an application device outside the block, as a plastic cage.

[0044] With respect to the processes of preparation of solid toilet blocks with a gel phase according to the known art, the process for the production of the solid block according to the present invention presents the advantage to be extremely simplified, not requiring the preparation, separately, of a solid phase and of a gel phase which will be then necessarily joined in the end product, but, on the contrary, allows the achievement of the solid block with a single simple process.

[0045] Thanks to the specific formulation of the solid block according to the present invention, as soon as put in use, the block turns into a product presenting on the surface initially a solid phase and a gel phase, to lead then, after a certain number of flushing operations, to be a solid block in the gel form. Additional to the advantages as previously indicated, it is also highlighted that the solid block according to the present invention implies costs definitely lower than those characterizing solid blocks comprising a gel phase according to the state of the art.

[0046] The operation of the solid block according to the present invention is thus the following:

the block is applied onto the internal wall of the sanitary object through a hook or plastic cage; when the rinsing water is operated, the water flow hits the same block and hydrates the block, which turns into a gel, releasing the active components. As previously indicated, approximately 120-150 flushing operations are required to allow the whole block to get the aspect of a gel.

[0047] Such active components, which are detergent, sanitizing or perfuming, dissolve in the water flow or evaporate and achieve the cleansing, sanitization and perfuming of the sanitary object.

[0048] At the same time the water also forms a foam, which increases the effectiveness of the cleansing of the sanitary object, causing the wear of the block, consuming at each flushing operation a small amount of materials, constituting the block itself, allowing therefore also the diffusion of a new perfuming agent. Therefore, as previously outlined, the standard blocks, during their life time, consume by erosion without substantially modifying their aspect. The solid toilet block provided with the specific formulation according to the present invention has, instead, as peculiar feature that of changing appearance (from solid to transparent gel) during its use (see figures 1-3, wherein it is apparent that the product in the initial state is matt (figure 1), after a certain number of flushing operations (25 flushings), the product provides a solid matt phase and a transparent gel phase (figure 2) and after a greater number of flushing operations (50 flushings) the product is fully in the gel form, transparent (figure 3).

[0049] This change of physical appearance has two important functions: the first, further than aesthetic, is that of visually informing the consumer on the fact that the block is suitably functioning, hydrating and releasing active components. The second relates to the fact that the gel forms by adsorption of water by side of the matrix, generating in fact a weight and volume increase in the initial phases of the solid block life. This feature of the block according to the present invention is particularly important, as while a standard block having a weight of 35-40 g averagely lasts 150-200 flushing operations, the present block allows, in view of an initial amount of active components in the solid block equal to about 30g, to achieve an end product in gel which lasts at least 400 flushing operations. Indeed, a solid block according to the present invention, subjected to rinsing operations of a volume variable from 6 to 9 litres each, having a weight of about 30 g, is completely rinsed off only after about 400 flushing operations, keeping in mind that the number of flushing operations necessary for the complete rinsing off depends also on the geometry of the block and the modes of flushing of water into the toilet bowl.

[0050] The following examples are provided with a mere illustrative purpose.

Example 1.

[0051] Using the process of preparation as previously described, it has been extruded a solid toilet block having a weight of about 30 g, rectangular, sized 65mm x 30mm x 10mm, having the following formulation (percentages by weight with respect to the total weight of the block):

| Components | % by weight |
|---|-------------|
| Perfume | 4,000 |
| Sodium LES 2 EO (sliding pasta at 70%, ZETESOL LES 70% ex Zimmer & Schwartz, foaming agent) | 2,000 |
| Mixture of oleyl and cetyl alcohols ethoxylates 55 moles EO (Emulgant CO 55 - Ex Sasol, non-ionic surfactant) | 91, 750 |
| Blue Colour | 0, 008 |
| Glycerol | 2, 000 |
| Water | 0, 242 |
| Total | 100, 000 |

[0052] Such a block, in a plastic cage, has been arranged in a sanitary object and subjected to a flushing test which averagely provides about 15 flushing operations a day. During use, said tablet got hydrated, adsorbing the flushing water and becoming a transparent gel.

[0053] As derivable from the graph reported in Figure 4, wherein each line of the graph represents a solid toilet block according to the formulation as previously indicated in use in several models of toilet bowls and the dotted line represents the average consumption, from the initial point 0, with 100 as a weight, it was recorded a weight increase of the block until 150 flushing operations. Such a weight increase, due to hydration, has been recorded concurrently to the formation

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of the gel.

[0054] The graph reported in figure 4 outlined that the solid block according to the present invention presents a lasting greater than 500 rinsing operations for each type of toilet bowl used.

5 Example 2 comparative.

[0055] It has been tested a standard solid toilet block, available on the market, having a weight of about 34 g, rectangular, sized 65mm x 30mm x 10mm, having the following formulation (percentages by weight with respect to the total weight of the block):

10

| Components | % by weight |
|---|-------------|
| Perfume | 4, 000 |
| Sodium sulfate (filler) | 55, 200 |
| Alpha-olefins sulfonated (anionic surfactant, NANSA LSS 480/H (80%) ex Huntsmann) | 6, 500 |
| n-C ₁₀ -C ₁₃ -sodium alkylbenzensulfonate (anionic surfactant, MARLON ARL (80%) ex Sasol) | 30, 000 |
| Sodium LES 2 EO (foaming agent, ZETESOL LES 27% ex Zimmer & Schwartz) | 0, 900 |
| PEG 6000 | 3, 000 |
| Titanium dioxide (colorant) | 0, 150 |
| Blue Colour | 0, 006 |
| Water | 0, 244 |
| Total | 100 |

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[0056] Such a block, in a plastic cage, has been arranged in a sanitary object and subjected to the same flushing test of example 1.

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[0057] In the graph reported in Figure 5 each line of the graph represents a solid toilet block according to the formulation previously indicated, in use in several models of toilet bowls, and the dotted line represents the average consumption.

[0058] The graph reported in figure 5 outlined that the standard solid block tested in the comparative example 2, presents a lasting of about 150 flushing operations for each type of toilet bowl used.

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[0059] It is thus apparent the superiority of the toilet block according to the present invention in terms of lasting connected with the particular formulation which provides a specific type of non-ionic surfactant and a reduced amount or absence of fillers.

Example 3 comparative.

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[0060] It has been tested a second standard solid toilet block, available on the market, having a weight of about 34 g, rectangular, sized 65mm x 30mm x 15mm, having the following formulation (percentages by weight with respect to the total weight of the block):

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| Components | % by weight |
|--|-------------|
| Perfume | 4, 000 |
| Sodium Carbonate (filler) | 38, 550 |
| Linear Alkyl benzene sulfonate (anionic surfactant, DDBS ISU LAS G ex ISU) | 55, 000 |
| PEG 6000 | 2, 200 |
| Blue Colour | 0, 008 |
| Water | 0, 242 |
| Total | 100 |

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[0061] Such a block, in a plastic cage, has been arranged in a sanitary object and subjected to the same flushing test

of example 1.

[0062] In the graph reported in Figure 6 each line of the graph represents a solid toilet block according to the formulation as previously indicated, in use in several models of toilet bowls, and the dotted line represents the average consumption.

[0063] The graph reported in figure 6 outlined that the standard solid block tested in the comparative example 3 presents a lasting of about 320 flushing operations for whichever type of toilet bowl used.

[0064] It is thus apparent the superiority of the toilet block according to the present invention in terms of lasting connected with the particular formulation which provides a specific type of non-ionic surfactant and a reduced amount or absence of fillers.

Claims

1. A toilet block having a formulation comprising:

- a non-ionic surfactant selected from one or more polyalkylethers, in an amount ranging from 85 to 95%, preferably from 91 to 93%, by weight with respect to the total weight of the block; wherein said non-ionic surfactant includes a linear or branched alkyl chain, preferably linear, with a number of carbon atoms greater than or equal to 10, and even more preferably comprised between 12 and 22; and wherein said non-ionic surfactant has a number of moles of ethylene oxide per molecule greater than 15, even more preferably greater than 30;
- a perfuming agent in an amount ranging from 2 to 10%, preferably from 3 to 5%, by weight with respect to the total weight of the block;
- a polyalcohol, with a number of carbon atoms preferably less than 5, or a polyether liquid at room temperature, in an amount ranging of from 0.1 to 3%, preferably of from 1.5 to 2.5%, by weight with respect to the total weight of the block;
- a foaming agent selected from the classes of anionic and/or non-ionic and/or cationic and/or amphoteric surfactants, in an amount ranging of from 1 to 3%, preferably of from 1.5 to 2.5%, by weight with respect to the total weight of the block;
- water in an amount ranging of from 0.1 to 0.5%, preferably of from 0.2 to 0.3%, by weight with respect to the total weight of the block;

said formulation including an inorganic or organic filler, in an amount less than 10% by weight, still more preferably said formulation not including any inorganic or organic filler.

2. Block according to claim 1, wherein the non-ionic surfactant is a mixture of polyalkylethers, with a linear alkyl chain with a number of carbon atoms ranging between 12 and 22 and with a number of moles of ethylene oxide per molecule greater than 30.
3. Block according to any one of the preceding claims, wherein the non-ionic surfactant is a mixture of oleyl and cetyl alcohols ethoxylates 55 moles EO, in an amount ranging of from 91 to 93%, more preferably of from 91 to 92%, by weight with respect to the weight total of the block.
4. Block according to any one of the preceding claims, wherein the polyalcohol is selected from glycerine, ethylene glycol and propylene glycol, in an amount ranging of from 0.1 to 3%, preferably of from 1.5 to 2.5%, by weight with respect to the total weight of the block.
5. Block according to any one of the preceding claims, wherein the polyether liquid at room temperature is a polyethylene glycol liquid at room temperature.
6. Block for toilet according to any one of the preceding claims, wherein the foaming agent is sodium lauryl ether sulfate (or sodium les 2 EO), in an amount ranging of from 1 to 3%, preferably of from 1.5 to 2.5%, even more preferably equal to 2% by weight with respect to the total weight of the block.
7. Block according to any one of the preceding claims, wherein the filler, when present, is an inorganic filler selected from sodium sulfate or sodium carbonate.
8. Block according to any one of the preceding claims, consisting of oleyl and cetyl alcohols ethoxylates 55 moles EO, a perfuming agent, glycerine, sodium lauryl ether sulfate, colorant and water.

9. Block according to any one of the preceding claims, consisting of oleyl and cetyl alcohols ethoxylates 55 moles EO in an amount equal to 91.75% by weight, of a perfuming agent in an amount equal to 4% by weight, of sodium lauryl ether sulfate 2 EO in an amount equal to 2% by weight in the form of a sliding pasta at 70% by weight, of glycerine in an amount equal to 2% by weight, of colorant in an amount equal to 0.008% by weight and of water in an amount equal to 0.242 % by weight.
10. Block according to any one of the preceding claims, applied to a peripheral edge of a lavatory bowl or toilet through a hook directly inserted into the body of the block or by means of an applicator device external to the block.
11. Method of production of a toilet block according to any one of claims 1 to 10, wherein the block is made by extrusion, molding or melting and/or subsequent pouring of mixture of components of the formulation.

Patentansprüche

1. Toilettenblock mit einer Formulierung umfassend:

ein nichtionisches Tensid, ausgewählt aus einem oder mehreren Polyalkylethern, in einer Menge, die zwischen 85 und 95 Gew.-%, bevorzugt zwischen 91 und 93 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt; wobei das nichtionische Tensid eine lineare oder verzweigte Alkylkette enthält, bevorzugt eine lineare Alkylkette, mit einer Zahl von Kohlenstoffatomen größer oder gleich 10, noch weiter bevorzugt zwischen 12 und 22; und wobei das nichtionische Tensid eine Anzahl von Molen von Ethylenoxid pro Molekül größer 15, noch weiter bevorzugt größer 30 aufweist;

- einen Duftstoff in einer Menge, die zwischen 2 und 10 Gew.-%, bevorzugt zwischen 3 und 5 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt;
- einen Polyalkohol mit einer Zahl von Kohlenstoffatomen bevorzugt kleiner als 5 oder einen bei Raumtemperatur flüssigen Polyether in einer Menge, die zwischen 0,1 und 3 Gew.-%, bevorzugt zwischen 1,5 und 2,5 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt;
- einen Schaumbildner, ausgewählt aus den Klassen der anionischen und/oder nichtionischen und/oder kationischen und/oder amphoteren Tensiden in einer Menge, die zwischen 1 bis 3 Gew.-%, bevorzugt zwischen 1,5 und 2,5 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt;
- Wasser in einer Menge, die zwischen 0,1 und 0,5 Gew.-%, bevorzugt zwischen 0,2 und 0,3 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt;

wobei die Formulierung einen anorganischen oder organischen Füllstoff in einer Menge von weniger als 10 Gew.-% enthält, wobei noch weiter bevorzugt die Formulierung keinen anorganischen oder organischen Füllstoff enthält.

2. Block nach Anspruch 1, wobei das nichtionische Tensid eine Mischung aus Polyalkylethern mit einer linearen Alkylkette ist, die eine Zahl von Kohlenstoffatomen zwischen 12 und 22 und eine Anzahl von Molen von Ethylenoxid pro Molekül größer 30 aufweist.
3. Block nach einem der vorstehenden Ansprüche, wobei das nichtionische Tensid eine Mischung aus Ethoxylaten von Oleyl- und Cetyl-Alkoholen mit 55 Mol/EO ist, in einer Menge, die zwischen 91 und 93 Gew.-%, insbesondere zwischen 91 und 92 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt.
4. Block nach einem der vorstehenden Ansprüche, wobei der Polyalkohol ausgewählt ist aus Glycerin, Ethylenglycol und Propylenglycol in einer Menge, die zwischen 0,1 und 3 Gew.-%, insbesondere zwischen 1,5 und 2,5 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt.
5. Block nach einem der vorstehenden Ansprüche, wobei der bei Raumtemperatur flüssige Polyether ein bei Raumtemperatur flüssiges Polyethylenglycol ist.
6. Toilettenblock nach einem der vorstehenden Ansprüche, wobei der Schaumbildner ein Natriumlauryl ethersulfat (oder Natriumlauryl ethersulfat 2 EO) ist, in einer Menge, die zwischen 1 und 3 Gew.-%, bevorzugt zwischen 1,5 und 2,5 Gew.-%, noch weiter bevorzugt gleich 2 Gew.-% in Bezug auf das Gesamtgewicht des Blocks liegt.

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7. Block nach einem der vorstehenden Ansprüche, wobei der Füllstoff, sofern vorhanden, ein anorganischer Füllstoff ist, ausgewählt aus Natriumsulfat oder Natriumcarbonat.
8. Block nach einem der vorstehenden Ansprüche, bestehend aus Ethoxylaten von Oleyl- und Cetyl-Alkoholen mit 55 Mol/EO, einem Duftstoff, Glycerin, Natriumlauryl ethersulfat, Farbstoff und Wasser.
9. Block nach einem der vorstehenden Ansprüche, bestehend aus Ethoxylaten von Oleyl- und Cetyl-Alkoholen mit 55 Mol/EO in einer Menge gleich 91,75 Gew.-%, einem Duftstoff in einer Menge gleich 4 Gew.-%, Natriumlauryl ethersulfat mit 2 EO in einer Menge gleich 2 Gew.-% in Form eines Gleitmittels mit 70 Gew.-%, Glycerin in einer Menge gleich 2 Gew.-%, Farbstoff in einer Menge gleich 0,008 Gew.-% und Wasser in einer Menge gleich 0,242 Gew.-%.
10. Block nach einem der vorstehenden Ansprüche, der am Umfangsrand einer Toilettenschüssel oder Toilette mit einem Haken direkt im Korpus des Blocks oder mittels einer Applizier Vorrichtung außerhalb des Blocks angebracht wird.
11. Verfahren zur Herstellung eines Toilettenblocks nach einem der Ansprüche 1 bis 10, wobei der Block durch Fließpressen, Formen oder Schmelzen und/oder anschließendes Gießen der Komponentenmischung der Formulierung hergestellt wird.

Revendications

1. Un bloc pour WC ayant une formulation comprenant :
- un tensioactif non ionique choisi parmi un ou plusieurs polyalkyléthers, en une quantité comprise entre 85 et 95 %, préférablement entre 91 et 93 %, en poids par rapport au poids total du bloc; dans lequel ledit tensioactif non ionique comprend une chaîne alkyle linéaire ou ramifiée, préférablement linéaire, avec un nombre d'atomes de carbone supérieur ou égal à 10, et encore plus préférablement supérieur compris entre 12 et 22; et dans lequel ledit tensioactif non ionique a un nombre de moles d'oxyde d'éthylène par molécule supérieur à 15, encore plus préférablement supérieur à 30;
- un agent parfumant en une quantité comprise entre 2 et 10 %, préférablement de 3 à 5 %, en poids par rapport au poids total du bloc ;
 - un polyalcool, avec un nombre d'atomes de carbone préférablement inférieur à 5, ou un liquide de polyéther à la température ambiante, en une quantité comprise entre 0,1 et 3 %, préférablement de 1,5 à 2,5 %, en poids par rapport au poids total du bloc ;
 - un agent moussant choisi parmi les classes de tensioactifs anioniques et/ou non ioniques et/ou cationiques et/ou amphotères, en une quantité comprise entre 1 et 3 %, préférablement de 1,5 à 2,5 %, en poids par rapport au poids total du bloc ;
 - de l'eau en une quantité comprise entre 0,1 et 0,5 %, préférablement de 0,2 à 0,3 %, en poids par rapport au poids total du bloc ;
- ladite formulation comprenant un matériau de remplissage inorganique ou organique, en une quantité inférieure à 10% en poids, encore plus préférablement ladite formulation ne comprenant pas de matériau de remplissage inorganique ou organique.
2. Bloc selon la revendication 1, **caractérisé en ce que** le tensioactif non ionique est un mélange de polyalkyléthers, avec une chaîne alkyle linéaire avec un nombre d'atomes de carbone compris entre 12 et 22, et avec un nombre de moles d'oxyde d'éthylène par molécule supérieur à 30.
3. Bloc selon l'une quelconque des revendications précédentes, dans lequel le tensioactif non ionique est un mélange d'éthoxylates d'alcool oléique et cétylique 55 moles EO, en une quantité comprise entre 91 et 93 %, plus préférablement entre 91 et 92 %, en poids par rapport au poids total du bloc.
4. Bloc selon l'une quelconque des revendications précédentes, dans lequel le polyalcool est choisi parmi la glycérine, l'éthylène glycol et le propylène glycol, en une quantité comprise entre 0,1 et 3 %, préférablement entre 1,5 et 2,5 %, en poids par rapport au poids total du bloc.

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5. Bloc selon l'une quelconque des revendications précédentes, dans lequel le liquide polyéther à la température ambiante est un liquide de polyéthylène glycol à la température ambiante.
- 5 6. Bloc pour WC selon l'une quelconque des revendications précédentes, dans lequel l'agent moussant est le sodium lauryl éther sulfate (ou sodium 2 moles EO), en une quantité comprise entre 1 et 3 %, préférablement de 1,5 à 2,5 %, encore plus préférablement égale à 2 % en poids par rapport au poids total du bloc.
- 10 7. Bloc selon l'une quelconque des revendications précédentes, dans lequel le matériau de remplissage, lorsqu'il est présent, est un matériau de remplissage inorganique choisi parmi le sulfate de sodium ou le carbonate de sodium.
- 15 8. Bloc selon l'une quelconque des revendications précédentes, composé d'éthyloxalates d'alcool oléique et cétylique 55 moles EO, d'un agent parfumant, de glycérine, de sodium lauryl éther sulfate, d'un colorant et de l'eau.
- 20 9. Bloc selon l'une quelconque des revendications précédentes, composé d'éthyloxalates d'alcool oléique et cétylique 55 moles EO en une quantité égale à 91,75 % en poids, d'un agent parfumant en une quantité égale à 4 % en poids, de sodium lauryléther sulfate 2 EO en une quantité égale à 2 % en poids sous forme d'une pâte coulissante à 70 % en poids, de glycérine en une quantité égale à 2 % en poids, de colorant en une quantité égale à 0,008 % en poids, et d'eau en une quantité égale à 0,242 % en poids.
- 25 10. Bloc selon l'une quelconque des revendications précédentes, appliqué à une bordure périphérique d'une cuvette de toilette ou d'une toilette à travers un crochet directement inséré dans le corps du bloc ou au moyen d'un applicateur externe au bloc.
- 30 11. Procédé de production d'un bloc pour WC selon l'une quelconque des revendications de 1 à 10, dans lequel le bloc est fabriqué par extrusion, moulage ou fusion et/ou par un versement subséquent d'un mélange des composants de la formulation.
- 35
- 40
- 45
- 50
- 55

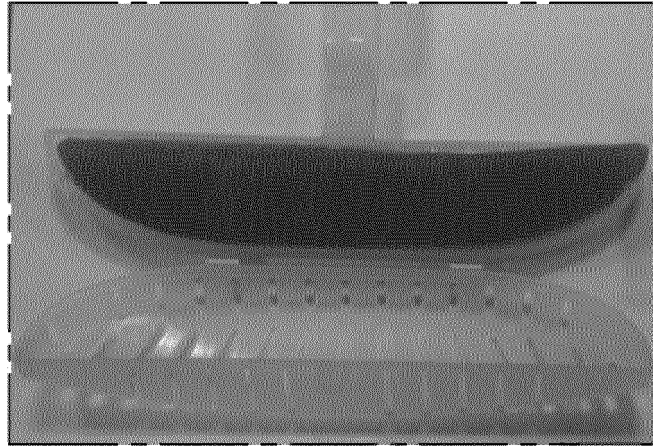


FIG. 1

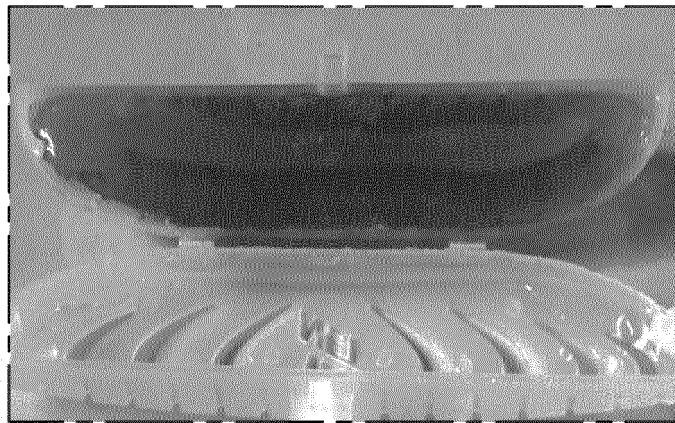


FIG. 2



FIG. 3

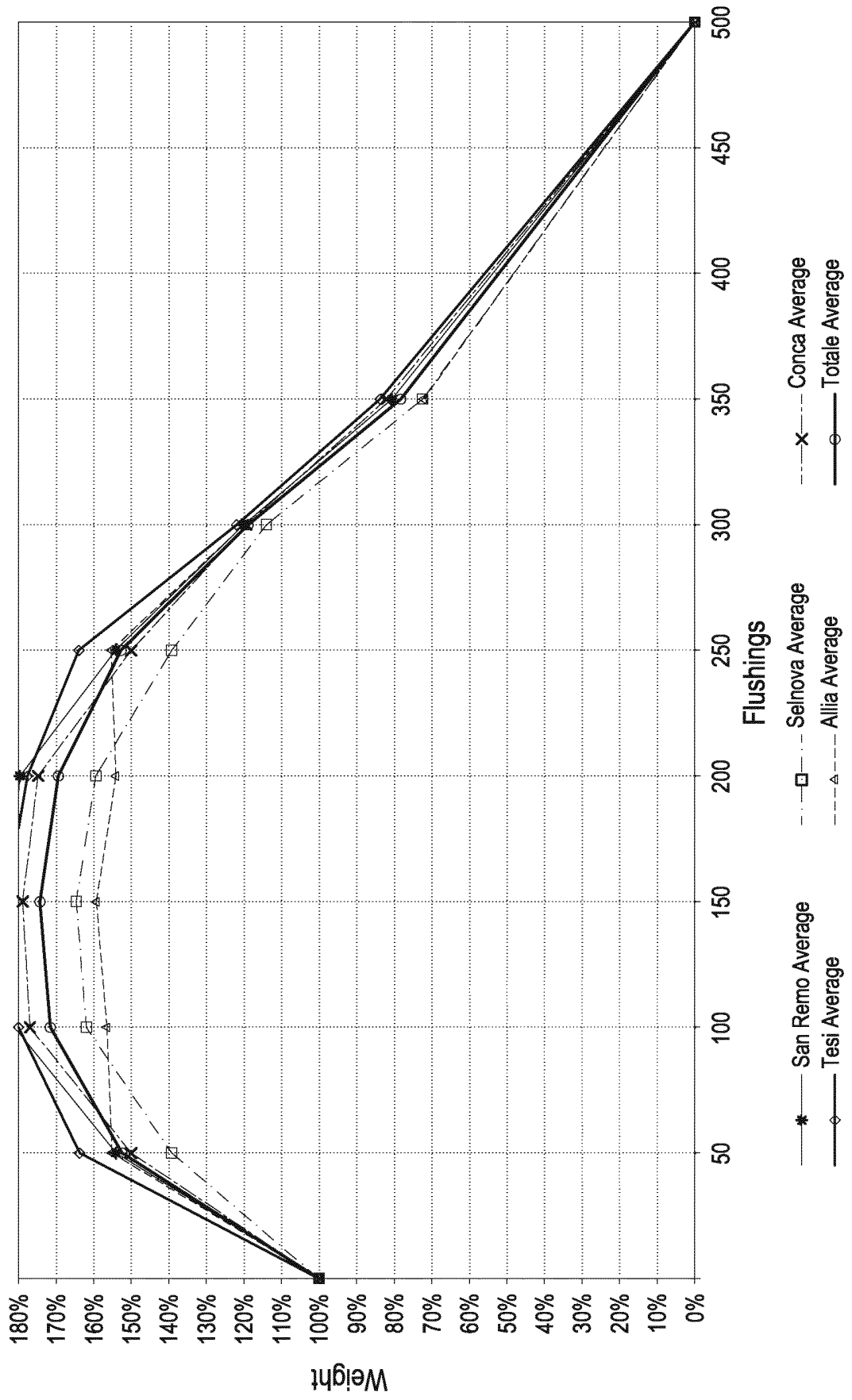


FIG.4

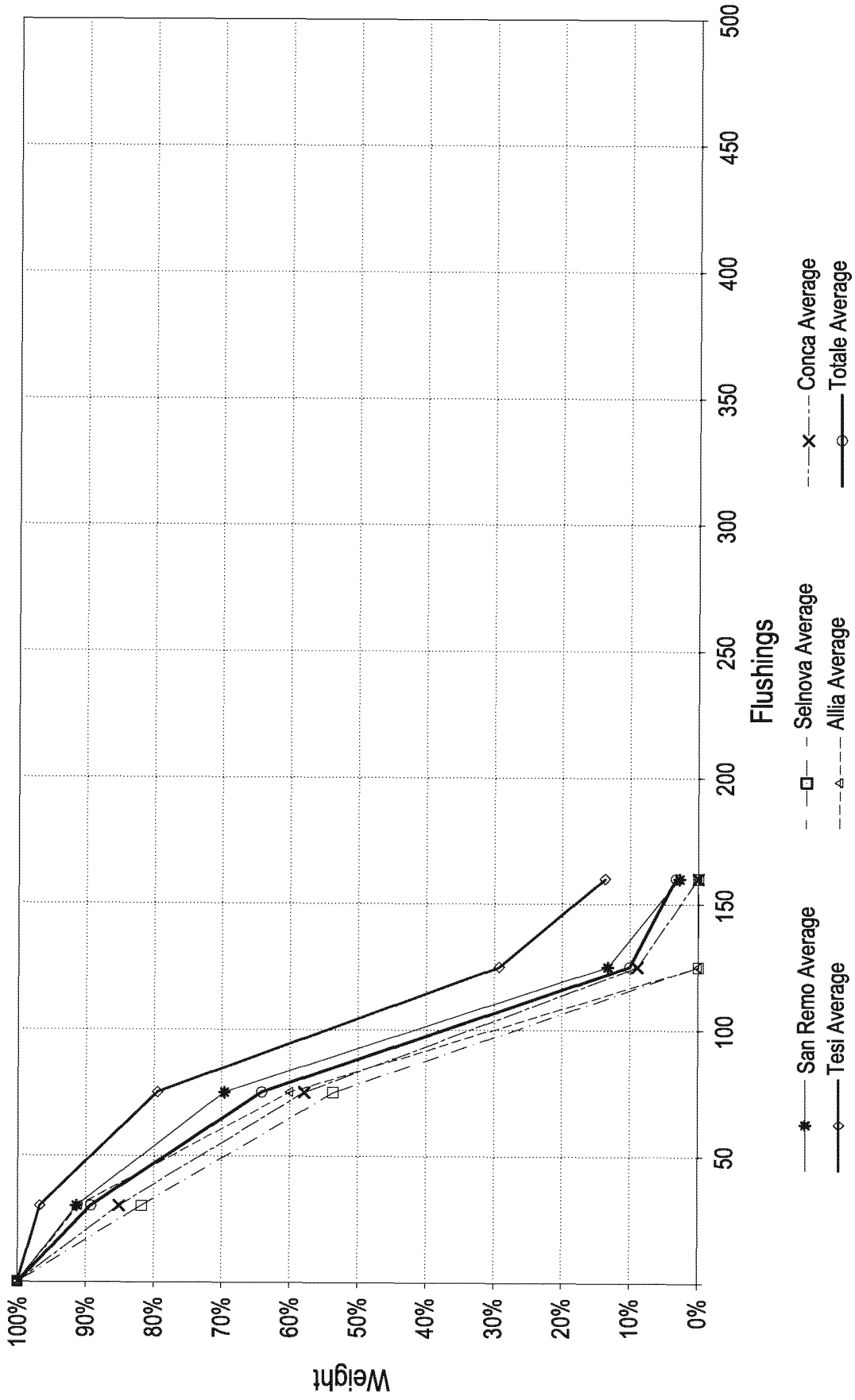


FIG.5

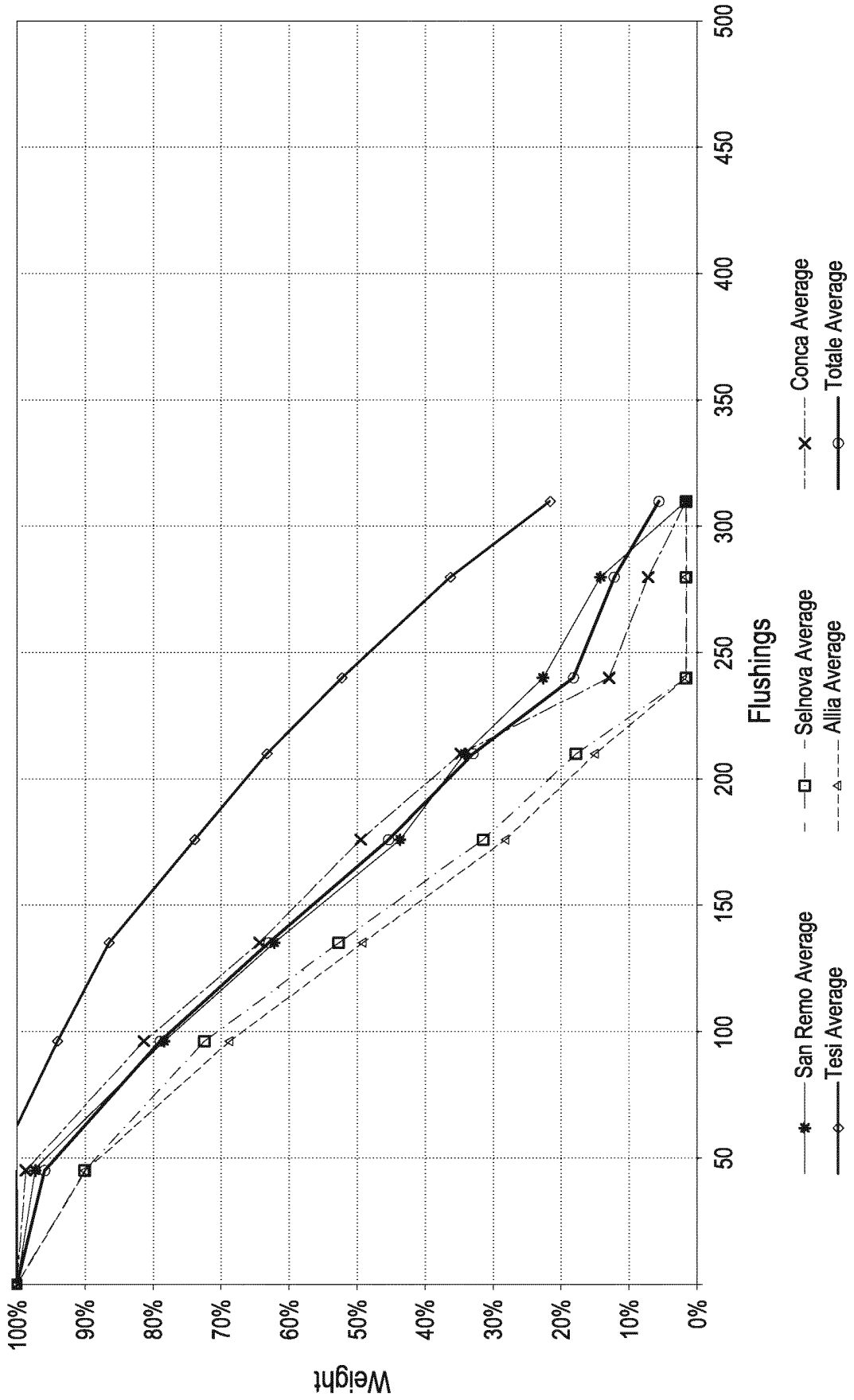


FIG.6

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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