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667039

NOTICE OF ENTITLEMENT

INSTRUCTIONS

(a) Name of person making statement.

(b) Position of that person.

(c) Name of applicant

(d) Address of applicant

I (a) Paul Symons

(b) Director

of (c) Jeyes Limited

of (d) Brunel Way, Thetford, Norfolk IP24 1HA,
Great Britain

State the following:-

1. The nominated person (applicant) is entitled to the grant of a patent

(e) (i) ~~as assignee of the actual inventor(s)~~

(ii) by contract of employment of the actual inventor(s)

or (iii) (f)

2. The nominated person (applicant) is entitled to claim priority from the basic convention application(s).

(g) (i) as applicants of the said application(s)

~~(ii) as the assignee of the applicants of the said application(s)~~

~~(iii) with the consent of the applicants of the said application(s)~~

3. The basic convention application(s) was/were the first made in a Convention country in respect of the invention the subject of the application. (h)

(i) Insert DATE of signing

Dated (i)

30th Nov 1993.

(j) Signature(s) of person making statement

(j)

Paul Symons, Director

JEYES LIMITED

Note: No legalization or other witness required

To: The Commissioner of Patents



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- (54) Title
LAVATORY CLEANSING BLOCKS
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9108574 22.04.91 GB UNITED KINGDOM
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- (71) Applicant(s)
JEYES LIMITED
- (72) Inventor(s)
JOHN MARSHALL; STEVEN JOHN FARRELL BLACK; BRIAN MURIE WILSON; JAMES WILLIAM YOUNGS
- (74) Attorney or Agent
GRIFFITH HACK & CO. , GPO Box 4164, SYDNEY NSW 2001
- (56) Prior Art Documents
EP 341836
EP 206725
- (57)

The third component of the block is a solubility control agent, that is, a compound of lower solubility ^{in water} than the anionic surface active component and which assists in controlling the rate of dissolution of the block.

Claim

1. A solid lavatory cleaning block formed of a composition comprising:
- (a) from 5% to 80% by weight of a surface active component comprising one or more anionic surface active agents;
 - (b) from 10% to 75% by weight of a chlorine release agent component consisting of one or more chlorinated cyanuric acid derivative chlorine release agents; and
 - (c) from 2% to 25% by weight of an organic solubility control agent (as hereinbefore defined);

(11) AU-B-19821/92
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-2-

the composition containing not more than 20% by weight of water-soluble inorganic salt introduced with the anionic surface active agent component and containing no other added inert, inorganic fillers or diluents.



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : C11D 17/00, A61L 9/01	A1	(11) International Publication Number: WO 92/18605 (43) International Publication Date: 29 October 1992 (29.10.92)
(21) International Application Number: PCT/GB92/00741 (22) International Filing Date: 22 April 1992 (22.04.92) (30) Priority data: 9108574.6 22 April 1991 (22.04.91) GB (71) Applicant (for all designated States except US): JEYES LIMITED [GB/GB]; Brunel Way, Thetford, Norfolk IP24 1HA (GB). (72) Inventors; and (75) Inventors/Applicants (for US only) : MARSHALL, John [GB/GB]; 27 Wentworth Green, Sunningdale, Norwich, Norfolk NR4 6AE (GB). BLACK, Steven, John, Farrell [GB/GB]; 36 Thorpe Drive, Attleborough, Norfolk NR17 2HS (GB). WILSON, Brian, Murie [GB/GB]; Torridon, Common Road, Bressingham, Diss, Norfolk IP22 2BB (GB). YOUNGS, James, William [GB/GB]; 47 Highlands, Thetford, Norfolk IP24 1JG (GB).	(74) Agent: LAMB, John, Baxter; Marks & Clerk, 57-60 Lincoln's Inn Fields, London WC2A 3LS (GB). (81) Designated States: AT (European patent), AU, BE (European patent), BR, CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB, GB (European patent), GR (European patent), IT (European patent), JP, KR, LU (European patent), MC (European patent), NL (European patent), SE (European patent), US. Published <i>With international search report.</i> 667039	
(54) Title: LAVATORY CLEANSING BLOCKS (57) Abstract The invention provides a solid lavatory cleansing block formed of a composition comprising (A) from 5 % to 80 % by weight of a surface active component comprising one or more anionic surface active agents; (B) from 10 to 75 % by weight of a chlorine release agent component consisting of one or more chlorinated cyanuric acid derivatives and chlorine agents; and (C) from 2 to 25 % by weight of a solubility control agent (as hereinbefore defined); the composition containing not more than 20 % by weight of water-soluble inorganic salt introduced with the anionic surface active agent component and containing no other added fillers or diluents.		

LAVATORY CLEANSING BLOCKS

This invention is concerned with improvements in and relating to lavatory cleansing blocks.

In particular, the present invention is concerned with solid lavatory cleansing blocks intended to be brought into contact with the flush water of a lavatory or urinal whereby a part of the block is dissolved in the flush water to release active ingredients thereto for cleaning the lavatory or urinal. The blocks are immersed in the water cistern of a lavatory or urinal, either as a free-standing block or may be placed or contained in a dispensing device, to be sited in a lavatory cistern. The invention is also concerned with lavatory cleansing blocks for intermittent contact with the flush water of a lavatory or urinal, e.g., a so-called "rim block" for placing in a container to be held under the rim of a lavatory.

One common class of component of lavatory cleansing blocks comprises one or more water-soluble surface

active agents. Another desirable component of such blocks would be a halogen release agent, that is a compound which on contact with water releases hypohalous acid and/or hypohalite ions to the water, since these are powerful sanitising and cleansing agents. In principle, there would appear to be no problem in combining these two classes of ingredient in a single block. However, halogen release agents are, by their nature, powerful chemically reactive species, serving as halogenating or oxidising agents. Thus, in practice, we have found that halogen release agents (i) tend to react with surface active materials and/or (ii) tend, when moistened, to evolve gas thereby losing their activity and, in many cases, destroying the physical integrity of the cleansing block. Further, halogen release agents may attack component parts of lavatories, urinals or their cisterns.

A particularly useful class of chlorine release agents comprises the N-chlorinated cyanuric acid derivatives such as sodium dichloroisocyanurate and trichlorisocyanuric acid. We have found in practice, however, that it is generally just not practically possible to reproducibly and reliably incorporate such chlorine release agents in a lavatory cleansing block in amounts sufficient to give useful cleansing and/or sanitising, e.g. amounts of 10% by weight or more.

We have now found, in accordance with the present invention, that it is possible to include such chlorinated cyanuric acid derivatives in blocks which contain no added filler (water-soluble or otherwise),
5 other than those which may be introduced as contaminants or components of a surface active component.

According to the invention, therefore, there is provided a solid lavatory cleaning block formed of a composition comprising:

- 10 (a) from 5% to 80%, preferably from 10% to 70%, by weight of a surface active component comprising one or more anionic surface active agents;
- (b) from 10% to 75%, preferably from 15% to
15 60%, by weight of a chlorine release agent component consisting of one or more chlorinated cyanuric acid derivative chlorine release agents; and
- (c) from 2% to 25%, preferably from 3% to 20%,
by weight of an organic solubility control agent (as
20 hereinbefore defined);

the composition containing not more than 20% by weight of water-soluble inorganic salts introduced with the anionic surface active agent(s) and containing no added inert, inorganic fillers or diluents.

- 25 Suitable anionic surface active agents for use in the blocks of the invention include alkali metal, typical sodium, paraffin sulphonates; alkali metal alkyl sulphates and alkali metal alkyl aryl sulphonates, especially alkali metal benzene sulphonates. A typical

example is sodium dodecyl benzene sulphonate which is a readily available material of commerce. The anionic surface active component of the block forms from 5 to 80% by weight of the composition, preferably from 10 to 70 % by weight thereof, most preferably from 25 to 65 % by weight thereof, and especially from 40 to 60% by weight thereof.

The chlorine release component of the block is an N-chlorinated cyanuric acid derivative, such as sodium dichloroisocyanurate or trichloroisocyanuric acid, especially the former.

The chlorine release component is present in the blocks of the invention in an amount of from 10 to 75% by weight, preferably from 15 to 70 % by weight, more preferably from 20 to 50 % by weight, and especially from 30 to 40% by weight.

The third component of the block is a solubility control agent, that is, a compound of lower solubility ^{in water} than the anionic surface active component and which assists in controlling the rate of dissolution of the block.

The solubility control agent may be virtually wholly insoluble in water or if, as discussed below a nonionic



surface active agent, have a low HLB, e.g. 5 or less. Such agents should be resistant to attack by the chlorine release component, both in the composition and in aqueous solutions produced by dissolution of the composition in use. It is a matter of simple experiment to determine whether any candidate is so resistant. Generally, the solubility control agent should be a saturated organic material or a highly chlorinated organic material. Examples of solubility agents which may be employed include polyethylene waxes; fatty alcohols; fatty acids; low ethoxylates (e.g. containing up to 4 ethylene oxide units per mole) of fatty alcohols and alkylphenols; paradichlorobenzene; and difficultly hydrolysable esters such as methyl salicylate and isobornyl acetate.

The solubility control agent should form from 2 to 25% of the weight of the block, more preferably from 3 to 20%, more preferably from 5 to 15% and especially 6 to 12% thereof.

Certain of the solubility control agents noted above, the ethoxylated fatty alcohols and alkyl phenols, also possess surface active properties and thus may contribute to the overall cleansing effect of a composition containing them. In this connection it may be noted that other nonionic surfactants may be present.

The blocks of the invention must not contain more than 20% by weight of inert water-soluble salts, such as sodium sulphate, present as impurities introduced with the anionic surface active agent which is preferably not more than 75% and especially less than 10% by weight thereof. Commercially available anionic surface active agents often contain appreciable amounts of filler or diluent, such as sodium sulphate or sodium phosphate, and such commercially available materials may be used in formulating blocks in accordance with the invention to provided that in so doing too much salt is not introduced. However, in accordance with the invention, substantially no additional (e.g. less than 1% by weight) water-soluble or other filler should be introduced, e.g., sodium sulphate, sodium carbonate, sodium tripolyphosphate, sodium bicarbonate, sodium metasilicate, sodium sesquicarbonate, sodium chloride, clays, calcite or the like.

As will be appreciated, any other ingredient present in the composition of the invention should be resistant to attack by the chlorine release agent. Thus, for example, most dyestuffs commonly employed in lavatory cleansing blocks to impart a pleasant colouration to the flush water are not sufficiently resistant to the chlorine release agents with the results that (a) the dyestuffs are decolourised or discoloured to an unpleasant colour and (b) available halogen, which would

otherwise serve as a sanitizing agent, is lost. However, there are indications that Acid Blue 7 may be adequately resistant. Similarly, most perfumes which are commonly employed in lavatory cleansing blocks are also subject to attack by the chlorine release agents although some odiferous materials may be adequately resistant (and additionally serve as solubility control agents); examples of these being substituted quinolines, cedryl methyl ether and cineole.

Lavatory cleansing blocks commonly contain a germicide or preservative but this is not generally necessary in the case of the blocks of the invention since they already contain powerful germicides, namely the halogen release agents.

As noted above, it is not generally possible to incorporate dyestuffs or perfumes in the blocks of the invention. However, some insoluble pigments are resistant to the chlorine release agents and may be incorporated in the blocks of the invention to impart a colouration to the flush water. Examples of suitable pigments include copper phthalocyanine pigments which can be conveniently incorporated in the blocks of the invention in the forms of dispersions in suitable media.

The blocks of the invention are suitably formed by a compression process, especially an extrusion process comprising the steps of forming a mixture of the components of the composition, extruding this mixture into rod or bar form and then cutting the extruded rod or bar into appropriately sized pieces or blocks. (In this connection it may be noted that a free standing lavatory cleansing block suitably has a weight of from 20 to 150 gms, preferably from 30 to 100 gms).

When an extrusion process is employed the mixture to be extruded should contain up to 15% by weight, of a liquid component or a solid component which is liquefied under extrusion conditions to act as a processing aid. In the case of the blocks of the invention this is conveniently provided by the use of a liquid solubility control agent such as a lower ethoxylated alcohol or alkyl phenol; a higher alcohol, chlorinated hydrocarbon or mineral oil.

The invention also provides a method of cleansing a lavatory by contacting the flush water thereof with a block in accordance with the invention.

In order that the invention may be well understood the following examples are given by way of illustration only.

Examples

Blocks having the formulations shown in Table 1 were produced by extruding the mixture and cutting into blocks, having a weight of about 65 gm.

Each block was tested in a lavatory cistern by subjecting it, to a total of 17 flushes per day. The life of each block was calculated by counting the total number of flushes which it survived. As will be seen, the blocks in accordance with the invention (Examples 1, 2 and 3) had significantly greater life than those not in accordance with the invention (Examples 4-11).

11 January 1993

Table 1

(Content of blocks in weight percent)

Example	1	2	3	4	5	6	7	8	9	10	11
Marlon A390		62.0	41.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	25.7
Nansa HS80GPF			20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	33.3
Nansa HS85S	61.0	-	-	-	-	-	-	-	-	-	-
Ficlor	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Dobanol 91	-	7.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	-
Synperonic AZ	9.0	-	-	-	-	-	-	-	-	-	-
Mineral Oil	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Arkopal 040	-	-	-	-	-	-	-	-	-	-	9.0
Sodium Sulphate	-	-	-	1.0	-	-	-	-	-	-	-
Sodium Tripolyphosphate	-	-	-	-	1.0	-	-	-	-	-	-
Sodium metasilicate	-	-	-	-	-	1.0	-	-	-	-	-
Sodium Carbonate	-	-	-	-	-	-	1.0	-	-	-	-
Sodiumsesquulcarbonate	-	-	-	-	-	-	-	1.0	-	-	-
Sodium bicarbonate	-	-	-	-	-	-	-	-	1.0	-	-
Sodium Chloride	-	-	-	-	-	-	-	-	-	1.0	-
Smectite Clay	-	-	-	-	-	-	-	-	-	-	2.0
Life Testing/ Number of Flushes	>400	>400	>400	220	145	61	38	48	133	132	85

11 January 1993

Chemical NamesMarlor A 390

is a trade name of Huls Aktiengesellschaft. Contains approx 90% dodecylbenzene sulphate sodium salt, the balance being mainly sodium sulphate

Nansa HS80SGPF

is a trade mark of Albright and Wilson Ltd. Contains approx 80% dodecylbenzene sulphonate sodium salt, the balance being mainly magnesium sulphate and sodium sulphate.

Ficlor

is a trade name of Fisons plc
Common chemical name sodium dichloroisocyanurate dihydrate.

Dobanol 91

is a trade name of Shell Chemicals. It is a distillation of C_9 to C_{11} primary alcohols contains approximately C_9 alcohol (17.25%), C_{10} alcohol (38.75%) and C_{11} alcohol (29.5%) the balance being other alkanols.



Synperonic AZ

is a trade mark of ICI Ltd. It is an approx 99% active ethoxylated synthetic primary alcohol with 2 molecules of ethylene oxide.

Arkopal N040

is a trade name of Hoescht UK Ltd. It is a approx 99% active alkylphenol ethoxylate with 4 moles of ethylene oxide.

THE CLAIMS:

1. A solid lavatory cleaning block formed of a composition comprising:

5 (a) from 5% to 80% by weight of a surface active component comprising one or more anionic surface active agents;

(b) from 10% to 75% by weight of a chlorine release agent component consisting of one or more chlorinated cyanuric acid derivative chlorine
10 release agents; and

(c) from 2% to 25% by weight of an organic solubility control agent (as hereinbefore defined); the composition containing not more than 20% by weight of water-soluble inorganic salt introduced with
15 the anionic surface active agent component and containing no other added inert, inorganic fillers or diluents.

2. A composition as claimed in claim 1 comprising: from 10% to 70% by weight of anionic surface active component;

20 from 15% to 60% by weight of chlorine release component; and

from 3% to 20% by weight of solubility control agent.

3. A solid lavatory cleaning block formed of a
25 composition comprising:

(a) from 5% to 80% by weight of a surface active component comprising one or more anionic surface active agents;

30 (b) from 10% to 75% by weight of a chlorine release agent component consisting of one or more chlorinated cyanuric acid derivative chlorine release agents; and

(c) from 2% to 25% by weight of an organic solubility control agent (as hereinbefore defined);
35 the composition containing not more than 20% by weight of water-soluble inorganic salt introduced with the anionic surface active agent component and containing no other added inert, inorganic fillers or diluents, the

block being substantially as herein described with
reference to the accompanying Examples.

DATED this 4th day of January 1996

JEYES LIMITED

5

By their Patent Attorneys

GRIFFITH HACK & CO



S:09923AC

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 92/00741

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl.5 C 11 D 17/00 A 61 L 9/01		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl.5	C 11 D	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with Indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
P, X	EP, A, 0462643 (UNILEVER) 27 December 1991, see page 2, lines 43-44; claims ---	1
Y	EP, A, 0341836 (JEYES) 15 November 1989, see the examples; claims ---	1, 2
Y	EP, A, 0206725 (JEYES) 30 December 1986, see the whole document ---	1, 2
A	EP, A, 0184416 (JEYES) 11 June 1986, see the claims 1, 5 ---	1
A	GB, A, 2021143 (JEYES) 28 November 1979, see the whole document -----	1
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>¹⁰ Special categories of cited documents :</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
25-06-1992	24. 07. 92	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	<div style="display: flex; justify-content: space-between;"> <div>Maria Pais</div> <div><i>Maria Pais</i></div> </div>	

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9200741

SA 58733

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 16/07/92.
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A- 0462643	27-12-91	AU-A- 7838691	19-12-91
EP-A- 0341836	15-11-89	AU-A- 3276389	19-10-89
		GB-A,B 2217343	25-10-89
		JP-A- 2043298	13-02-90
EP-A- 0206725	30-12-86	AU-B- 585356	15-06-89
		AU-A- 5887486	18-12-86
		GB-A,B 2178442	11-02-87
EP-A- 0184416	11-06-86	GB-A- 2169612	16-07-86
		AU-B- 575225	21-07-88
		AU-A- 5053885	05-06-86
		US-A- 4738728	19-04-88
GB-A- 2021143	28-11-79	None	