



**EUROPEAN PATENT APPLICATION**

Application number : **93309649.7**

Int. Cl.<sup>5</sup> : **C11D 3/39, C11D 17/00**

Date of filing : **02.12.93**

Priority : **03.12.92 GB 9225333**

Date of publication of application :  
**15.06.94 Bulletin 94/24**

Designated Contracting States :  
**AT BE CH DE DK ES FR GB GR IE IT LI LU MC  
NL PT SE**

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**Lavatory cleansing compositions.**

- A thickened aqueous toilet cleaning composition comprises
- (i) an acidic limescale removing agent ;
  - (ii) hydrogen peroxide ;
  - (iii) a buffering agent ;
  - (iv) one or more thickening agents ; and
  - (v) water.

This invention is concerned with improvements in and relating to lavatory cleansing compositions; more particularly, the invention is concerned with thickened liquid lavatory cleansing compositions for application to toilet bowls.

Basically, the present invention provides a thickened aqueous toilet cleaning composition comprising

- (i) an acidic limescale removing agent;
- (ii) hydrogen peroxide;
- (iii) a buffering agent;
- (iv) one or more thickening agents; and
- (v) water.

The compositions in accordance with the invention are intended for application to the inside surface especially of a toilet bowl to provide a limescale removing action and, also, to provide a bleaching action due to the presence of hydrogen peroxide). By virtue of being thickened, that is more viscous, the compositions of the invention will tend to cling to the inner surface of the toilet bowl, thereby providing a longer contact time for improved limescale removing and bleaching activity.

Typically, compositions in accordance with the invention will be packaged in so-called "squeeze bottles" so that a jet of the composition may be directed to the desired portion of the toilet bowl, optionally through an angled orifice jet provided on the squeeze container.

The limescale removal agent is acidic in nature and should be water-soluble. The preferred limescale removing agent is phosphoric acid but other acids may be used such as sulphamic or sulphuric acids and, surprisingly, hydrochloric acid. Alternatively, organic acids may be employed, such as acetic acid, and, in accordance with a modification of the invention, some or all of the limescale removal agent and peroxide may be replaced by an organic peracid such as peracetic acid. The limescale removing agent should be present in the composition in an amount sufficient to afford adequate limescale removing activity, e.g. in an amount of from 1 to 20% by weight, preferably 2 to 7% by weight.

The hydrogen peroxide will be introduced into the composition in the form of an aqueous solution thereof, typically containing to 5% by weight of  $H_2O_2$ . The hydrogen peroxide should be present in the final make up composition in an amount sufficient to afford effective bleaching activity, typically it will be present in an amount of from 1 to 15 % by weight, more especially 2 to 6 % by weight.

A suitable buffering agent for use in the composition is sodium borate and this is suitably present in an amount of 1 to 10 % by weight, preferably 1 to 2 % by weight.

A range of thickening agents may be used to thicken the compositions in accordance with the invention. Preferred systems are those described in EP-A-0265979 and basically comprising a quaternary ammonium salt or amine oxide sulphate together with cumene sulphate, xylene sulphonate and/or toluene sulphonate, suitably in the proportions therein mentioned.

In addition to the above ingredients, compositions in accordance with the invention can, and often will, contain other ingredients. Thus, other adjuvants such as perfumes and/or colorants may be present, e.g. in amounts of up to about 1.5% by weight. Suitable colorants are water-insoluble pigments such as Unisperse green or Flexobrite yellow.

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

#### Example

The following composition was made up:-

5	aqueous H <sub>2</sub> O <sub>2</sub> solution (35%)	14.30 % by wt
	hexadecyl trimethylammonium chloride	7.11 % by wt
	aqueous sodium xylene sulphonate solution (30%)	4.00 % by wt
	sodium borate	1.50 % by wt
	demineralized water	to 100 % by wt
10	Perfume	0.10 % by wt
	Unisperse green (1%)	0.45 % by wt
	Flexobrite yellow (1%)	0.18 % by wt
15	Phosphoric acid	5.0 % by wt

Similar compositions were prepared, replacing the phosphoric acid with other acids as noted above. A modified composition was prepared by replacing the hydrogen peroxide solution and phosphoric acid by an aqueous solution comprising about 1% peracetic acid, about 8% acetic acid and about 7% hydrogen peroxide.

## Claims

1. A thickened aqueous toilet cleaning composition comprising
  - (i) an acidic limescale removing agent;
  - (ii) hydrogen peroxide;
  - (iii) a buffering agent;
  - (iv) one or more thickening agents; and
  - (v) water.
2. A composition as claimed in claim 1 containing from 1 to 20% by weight of limescale removing agent, from 1 to 15% by weight of hydrogen peroxide, and from 1 to 10% by weight of buffering agent.
3. A modification of the composition claimed in claim 1 or claim 2 in which all or a part of the limescale removing agent and the hydrogen peroxide are replaced by an organic peracid.



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# EUROPEAN SEARCH REPORT

Application Number  
EP 93 30 9649

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	US-A-5 078 896 (H. RORIG) * claims; example 5 * ---	1-3	C11D3/39 C11D17/00
X	RESEARCH DISCLOSURE no. 301, May 1989, NEW YORK page 303 ANONYMOUS 'Thickenend cleaning composition' ---	1-3	
X	DATABASE WPI Derwent Publications Ltd., London, GB; AN 93-004726 & JP-A-4 332 799 (KAO CORP.) 19 November 1992 * abstract * ---	1,2	
X	DATABASE WPI Derwent Publications Ltd., London, GB; AN 93-004727 & JP-A-4 332 800 (KAO CORP.) 19 November 1992 * abstract * ---	1,2	
A	DATABASE WPI Derwent Publications Ltd., London, GB; AN 89-321432 & JP-A-1 240 600 (SEIWA KOGYO KK) 18 March 1988 * abstract * ---	1,2	
A	EP-A-0 188 025 (UNILEVER) * claims 1-3; examples * -----	1,2	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 February 1994	Examiner Grittern, A
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

EPO FORM 1503 03.92 (P04C01)