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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
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(54) Title: DENTINAL DESENSITIZING DENTIFRICE

(57) Abstract: A dental composition which eliminates or substantially reduces the discomfort and pain associated with dental hypersensitivity and exhibits enhanced anticaries and remineralization benefits which composition contains a fluoride ion and a potassium ion releasable salt and has a pH in the range of about 8 to about 9.9, the pH being buffered with phosphate salt.

INTERNATIONAL SEARCH REPORT

International / Ion No  
PCT/US 03/24526

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61K7/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 702 686 A (MAEKAWA KIYOSHI ET AL) 30 December 1997 (1997-12-30) column 4, line 18 - line 27; example 2 column 4, line 6 - line 17 column 3, line 17 - line 31; claims 1-18 ---	1, 2, 4-6, 8, 9, 11
Y	WO 01 45660 A (CHADWICK THOMAS C ;MATTHEWS ALAN (US); PINEDA RACHEL (US); DEN MAT) 28 June 2001 (2001-06-28) page 9, line 3 - line 10 page 10, line 13 - line 25 page 11, line 24 -page 12, line 3; example 9; table 2 --- -/--	1-12

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

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- \*E\* earlier document but published on or after the international filing date
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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*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.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA

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International n No  
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 215 740 A (DOMKE TODD W ET AL) 1 June 1993 (1993-06-01) column 1, line 52 -column 2, line 2; claims 1-4 column 2, line 37 - line 40; examples I-IV ---	1-12
Y	US 5 718 885 A (MARKOWITZ KENNETH J ET AL) 17 February 1998 (1998-02-17) column 4, line 58 -column 5, line 8; examples 24,27 ----	1-12
A	GB 2 188 548 A (BEECHAM GROUP PLC) 7 October 1987 (1987-10-07) page 1, line 14 - line 46 page 2, line 26 - line 27; examples 6-8 ----	1-12
A	US 5 895 641 A (USEN NORMAN ET AL) 20 April 1999 (1999-04-20) column 2, line 62 -column 3, line 43 column 9, line 20 - line 25; examples ----	1-12
X	US 6 180 089 B1 (GAMBOGI ROBERT J. ET AL) 30 January 2001 (2001-01-30) cited in the application column 2, line 41 - line 62 column 3, line 58 -column 4, line 56; claims 1-19; table I ----	13,15, 17-21, 23-28
X	WO 01 66074 A (COLGATE PALMOLIVE CO) 13 September 2001 (2001-09-13) page 1, line 34 -page 2, line 7 page 2, line 32 -page 3, line 15; table I page 6, line 19 -page 7, line 33 ----	13, 16-18,20 14,15, 21-28
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A		14-16, 21-28
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A	WO 99 53893 A (COLGATE PALMOLIVE CO) 28 October 1999 (1999-10-28) page 3, line 3 - line 7 page 3, line 31 - line 38 page 8, line 25 - line 36; claims; example 1 ----	13-28
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## INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/US 03/24526

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 780 015 A (FISHER STEVEN W ET AL) 14 July 1998 (1998-07-14) column 2, line 38 - line 51; claims; examples; table I -----	13-28
A	US 5 939 052 A (WHITE DONALD JAMES ET AL) 17 August 1999 (1999-08-17) column 1, line 55 - line 62 column 2, line 15 - line 28 column 3, line 30 - line 58; claims -----	13-28

# INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/US 03/24526

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 8-12 and 21-28 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the composition.
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-12

The subject-matter of claims 1-12 refers to a dental composition containing a fluoride ion and a potassium ion releasable salt, the composition having a pH of 7.5-9 and being buffered with an alkali metal phosphate salt. The method of dispensing the said composition for the application on the teeth is also disclosed.

2. Claims: 13-28

The subject-matter of claims 13-28 pertains to a two components dental composition wherein the first component has a pH of 6.5-7.5 the pH being buffered with a phosphate salt and a second component has a pH of 8.0-9.9 and at least one of the components contains either a fluoride ion or a potassium ion releasable salt.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Search No  
PCT/US 03/24526

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