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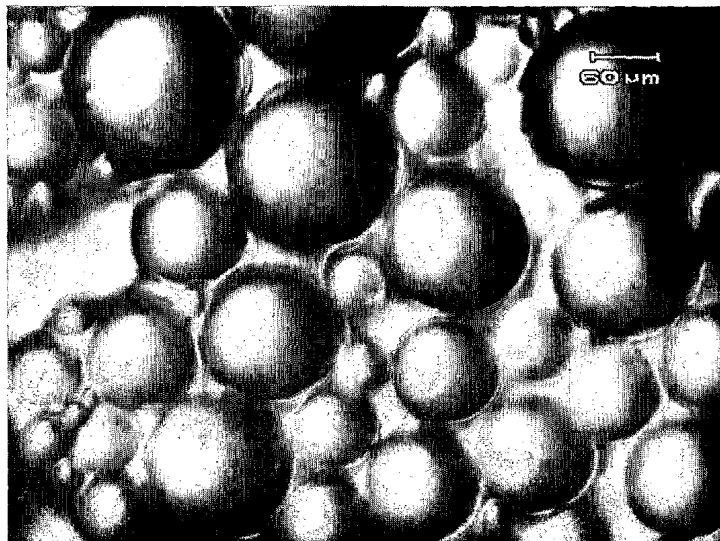
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- (71) Applicant (for all designated States except US): ENGI-
NEERED RELEASE SYSTEMS, INC. [US/US]; 9 UNI-
VERSITY PLACE, Suite DB230, Rensselaire, NY 12144-
3465 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LAULICHT,
Bryan, E. [US/US]; 36 Arbor Lane, Roslyn Heights, NY
11577 (US). BAKHRU, Sasha [US/US]; 2 Turnberry
Lane, Loudonville, NY 12211 (US).

- (74) Agent: FEHLNER, Paul, F.; BAKER BOTTS L.L.P., 30
Rockefeller Plaza, New York, NY 10112-4498 (US).
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(54) Title: CHEMICALLY CROSS-LINKED ELASTOMERIC MICROCAPSULES



(57) Abstract: The present invention relates to the fields of stably encapsulating oral care, skin care, scented, flavoring agents for cued release, and therapeutic agents for extended and sustained release. The invention relates to the stable microencapsulation of these agents for incorporation into dentifrices, topical ointments, microwavable food products, dryer sheets and chewing gums to be released during brushing, applying, heating, tumbling, and masticating respectively. Additionally, the invention encompasses extended and sustained release formulations that achieve reservoir-type delivery of therapeutic agents. The invention discloses methods for manufacturing and post-processing populations of chemically cross-linked elastomeric microcapsules allowing for the incorporation of encapsulated agents into a wide range of formulations without significantly altering their physio-chemical properties while providing for the cued delivery of the encapsulated agent upon the reception of a single or multiple mechanical or thermo-mechanical cues, or extended delivery via diffusion.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/27163

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: A61K 9/14(2006.01)

USPC: 424/489
 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)
 U.S. : 424/489

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98/16621 A2 (FRANCE, MARK) 23 April 1998, pages 5-8, 12-13, examples	1, 4, 7-12, 18-20, 24-28
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Y		2-5, 13-26, 21-23
Y	US 4,637,905 (GARDNER, D.) 20 January, 1987, whole document.	2, 4, 20-23
Y	US 3,947,571 (Murphy et al.) 30 March 1976, abstract, claims	3, 5, 13-16
Y	US 4,473,550 (Rosenbaum et al.) 25 September 1984 abstract, examples, claims.	22, 23

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 16 June 2008 (16.06.2008)	Date of mailing of the international search report 15 AUG 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer <i>Valerie Ball-Harris</i> Eric E. Silverman, PhD Telephone No. (571) 272-1600

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: 29
because they relate to subject matter not required to be searched by this Authority, namely:
Claim 29 is a method claim that does not contain any positive method step.
2. Claims Nos.: 30 and 31
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:
Please See Continuation Sheet
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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

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 additional fees, this Authority did not invite payment of any additional fees.
 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 and, where applicable, the payment of a protest fee.
 - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - No protest accompanied the payment of additional search fees.

Continuation of Box II Reason 2:

CClaim 30 lacks antecedent basis for "the prepolymer" and "[the] curing agents", and as such there is no way to know wha prepolymer and curing agents are included in the claim. Claim 31 is a process of forming a product, but does not contain any process step that actually forms a product, only steps that increase osmality. As there are no steps that form the product, no meaningful search of this method can be carried out.