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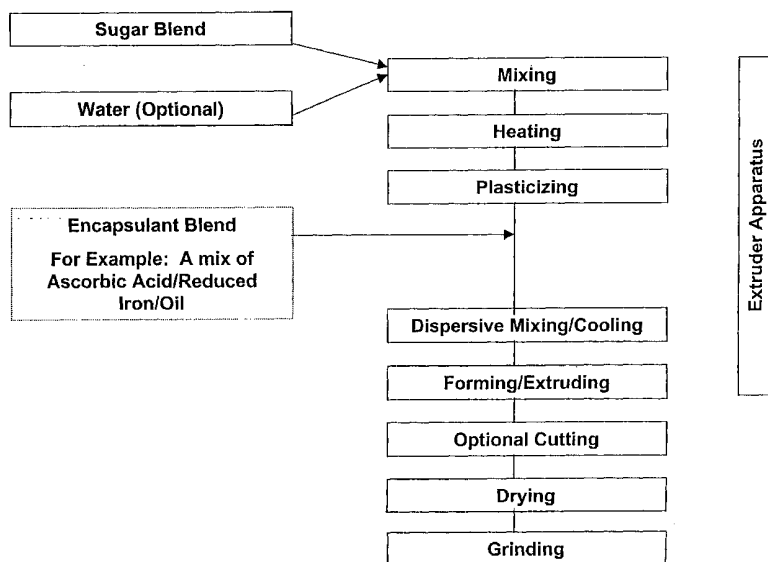
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[Continued on next page]

(54) Title: PRODUCTION OF OIL ENCAPSULATED MINERALS AND VITAMINS IN A GLASSY MATRIX



(57) Abstract: A mineral or vitamin fortification ingredient which does not deteriorously affect palatability and appearance of foods is obtained by encapsulation of the mineral or vitamin in a grindable, glassy matrix composition. At least one edible oil is included in the encapsulating composition to prevent substantial adverse interaction between the mineral or vitamin encapsulant and the glass-forming matrix material, and to achieve controlled release of the encapsulant from the glassy matrix. The oil also reduces or eliminates the use of added water as a plasticizer thereby avoiding the need for substantial evaporation or drying to achieve a non-rubbery, grindable encapsulated ingredient. The oil assists in plasticizing the matrix

material for extrudability and the prevention of undesirable browning or discoloration of the encapsulating matrix composition. The oil and the glassy matrix material provide a smooth mouthfeel and eliminate the rough, scratchy, griffy, dry, hard, or chalky mouthfeel associated with particulate or crystalline mineral sources. The fortification ingredient may be produced by melting the one or more glass-forming matrix components such as mono- or di-saccharides in the presence of optionally added water. The resulting melt may then be combined with an oil-slurried mineral and/or vitamin encapsulant and cooled to obtain a formable, pliable molten mass. The mass may be extruded and cut into pieces or pellets and cooled to obtain a grindable, glassy matrix which encapsulates the oil encapsulated mineral or vitamin. The encapsulated minerals and/or vitamins may be ground into a particulate composition such as a fine powder for direct incorporation into or for topical application onto foods such as ready-to-eat cereals, yogurt and fruit snacks.



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INTERNATIONAL SEARCH REPORT

Intern	al Application No
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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 A23L A23P		
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, PAJ, FSTA		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
° Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *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) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *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 *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. *&* document member of the same patent family		
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Tallgren, A

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