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(54) Title: ENHANCING SOLUBILITY OF IRON AMINO ACID CHELATES AND IRON PROTEINATES

(57) Abstract: A method of enhancing the solubility of iron amino acid chelates and iron proteinates is disclosed. This is accomplished by mixing an effective amount of an organic acid solubilizing agent into existing iron amino acid chelates or iron proteinates. The iron amino acid chelates and iron proteinates may have a ligand to metal molar ratio from about 1:1 to 4:1, preferably 2:1 to 3:1.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/26118

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A23L 1/304; C07F 15/02; C07K 1/12

US CL : 426/271, 656, 657; 514/6, 21, 23, 53, 502; 530/300, 343; 536/121; 556/2, 138, 148

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. : 426/271, 656, 657; 435/68.1; 514/6, 21, 23, 53, 502; 530/300, 343; 536/121; 556/2, 138, 148

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,830,716 A (ASHMEAD) 16 May 1989 (16/05/89), see entire document, especially Example IV, claim 5.	1-28
A	US 5,504,055 A (HSU) 02 April 1996 (02/04/96), see entire document, especially Examples I-II, claims 1 and 9.	1-28
X	US 5,516,925 A (PEDERSEN ET AL) 14 May 1996 (14/05/96), see entire document, especially column 6, lines 20-22, column 11, lines 8-15.	1, 3, 4, 7-10, 14, 16
X	WO 98/048648 A1 (THE PROCTER & GAMBLE COMPANY) 05 November 1998 (05/11/98), see entire document, especially page 12, lines 1-34, page 13, lines 26-36, page 15, lines 7-11, Examples 3 and 5-12, claims 20-29.	1-9, 11-28

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

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INTERNATIONAL SEARCH REPORT

PCT/US02/26118

Continuation of B. FIELDS SEARCHED Item 3:

EAST, DIALOG

search terms: iron, amino acid chelate, proteinate, sugar, disaccharide, glucose, sucrose, ascorbic, citric, acetic, lactic, malic, succinic