



(86) Date de dépôt PCT/PCT Filing Date: 2002/05/06
(87) Date publication PCT/PCT Publication Date: 2002/11/21
(45) Date de délivrance/Issue Date: 2011/07/05
(85) Entrée phase nationale/National Entry: 2003/10/20
(86) N° demande PCT/PCT Application No.: EP 2002/005076
(87) N° publication PCT/PCT Publication No.: 2002/092739
(30) Priorité/Priority: 2001/05/15 (GB0111862.9)

(51) Cl.Int./Int.Cl. *C11D 1/83* (2006.01),
C11D 1/835 (2006.01), *C11D 1/94* (2006.01),
C11D 11/00 (2006.01), *C11D 11/02* (2006.01),
C11D 17/00 (2006.01), *C11D 17/06* (2006.01),
C11D 3/12 (2006.01), *C11D 1/28* (2006.01),
C11D 1/14

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 November 2002 (21.11.2002)

PCT

(10) International Publication Number
WO 02/092739 A1

(51) International Patent Classification⁷: **C11D 1/83**,
1/835, 1/94, 11/00

5EH (GB). **WILSON, John, Edley**; Unilever Research
Port Sunlight, Quarry Road East, Bebington, Wirral,
Merseyside CH63 3JW (GB).

(21) International Application Number: PCT/EP02/05076

(22) International Filing Date: 6 May 2002 (06.05.2002)

(74) Agents: **FRANSELLA, Mary, Evelyn** et al.; Unilever
PLC, Patent Department, Colworth House, Sharnbrook,
Bedford, Bedfordshire MK44 1LQ (GB).

(25) Filing Language: English

(26) Publication Language: English

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GRANULAR DETERGENT COMPOSITION**TECHNICAL FIELD**

5 The present invention relates to granular compositions containing structured nonionic surfactant, for use in particulate laundry detergent compositions.

BACKGROUND AND PRIOR ART

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It is frequently desired to include nonionic surfactant in granular laundry detergent compositions as it gives good oily soil detergency and can reduce foam levels, which is beneficial in detergent compositions for use in automatic
15 washing machines.

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Nonionic surfactant may be introduced into granular detergent compositions during the manufacture thereof along with other components such as anionic surfactants, builders etc. manufacturing requirements can place an upper limit to the amount of nonionic surfactant which can be included.

25

Detergent compositions with relatively high quantities of nonionic surfactant may be required as detergent compositions in their own right or for dosing to other detergent compositions to increase the proportion of nonionic surfactant in the combined composition.

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The present application relates both to the inclusion of nonionic surfactant in fully formulated granular detergent compositions and to nonionic-surfactant-containing granular

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compositions with high nonionic content for dosing to other detergent compositions.

Nonionic-surfactant-containing particles are disclosed for example in JP 08 027 498A (Kao), which discloses a silica based carrier having an oil absorption capacity of at least 80 ml/g and capable of providing a particle having up to 50% by weight of nonionic surfactant.

10 EP 521 635A (Unilever) discloses the use of zeolite P having a silicon to aluminium ratio not greater than 1.33 (otherwise called zeolite MAP) as a carrier for liquid, viscous-liquid, oily or waxy detergent ingredients such as nonionic surfactant. The zeolite MAP can be used in the
15 form of a powder, granulate or as a component of a detergent composition.

Problems are now being experienced with the rate of dissolution of nonionic surfactant from granulates
20 comprising nonionic surfactant absorbed in a carrier, referred to herein as dispersion. In particular, problems have been encountered such as poor dispersion of the powder into the wash water in the dispenser drawer of an automatic washing machine. A gritty, viscous mass may remain in the
25 dispenser drawer. Further, powder compositions entrained in the wash water may not break-up and disperse adequately. Undispersed particles of powder compositions may remain in the wash water. These can adhere to clothes and cause local damage. Undissolved powder composition can remain on the
30 clothes after washing. There may be particular dispersion

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problems where nonionic surfactant is absorbed onto carrier particles comprising a high proportion of aluminosilicate.

5 The structuring of nonionic surfactants, by forming a premix with a suitable structurant, prior to their use in preparing detergent powders is known.

10 US 5,610,131 (Procter & Gamble) discloses granular high bulk density detergent compositions containing nonionic surfactant structured with a polymer. The polymer, e.g. polyvinyl pyrrolidone, is premixed with the nonionic surfactant. Another polymer, polyethylene glycol, is proposed in WO 94 09109A.

15 US 3 868 336 (Lever Bros Co/Mazzola) discloses applying a liquid or oily "detergency improver" (a low-EO nonionic) to a detergent powder, and also applying a finely divided flow-promoting agent to reduce caking. Preferred flow-promoting aids are fine particulate water-soluble detergent
20 ingredients, e.g. phosphates (e.g. STP), polymers (e.g. PVA), organic builders (e.g. ODS), SCMC, perborate. The detergency improver and the flow promoter are preferably added separately.

25 EP 622 454A (Procter & Gamble) discloses structuring of liquid nonionic surfactants prior to a granulation process: the structurants are polymers, preferably PVA, hydroxyacrylic polymers, PVP, PVNO, or sugars, or artificial sweeteners.

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Granular laundry compositions containing liquid blends of nonionic surfactant and liquid anionic surfactants are known in the art, see for example, EP 0544 365A (Unilever), EP 0265 203A (Unilever), WO 92 06150A (Procter & Gamble) and US 5 4 675 124 (Henkel).

The present inventors have now found that the rate of dissolution of nonionic-surfactant-containing granular compositions can be improved if the nonionic surfactant is structured by intimate admixture with a structurant, which is a fine particulate non-soap ionic surfactant, before preparing the granular composition.

DEFINITION OF THE INVENTION

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In a first aspect, the present invention provides a nonionic-surfactant-containing granular composition, comprising:

- 20 (a) a structured surfactant blend, and
 (b) a granular carrier material,

wherein the structured surfactant blend comprises (a)(i) a nonionic surfactant in intimate admixture with (a)(ii) a structurant which is a fine particulate non-soap ionic surfactant, the weight ratio of (a)(i) to (a)(ii) being within the range of from 20:1 to 1:1.

In a second aspect of the invention, there is provided a process for manufacturing the nonionic-surfactant-containing granular composition defined above, which process comprises:

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In general, the particle size of the structurant is preferably small. Preferably the d₅₀ particle size lies within the range of from 1 to 50 micrometres.

5 The Granular Carrier Material

The granular carrier material must be capable of carrying the surfactant/water-insoluble liquid blend by absorption and/or adsorption. Thus the carrier material suitably has
10 intraparticulate or interparticulate porosity.

Although it is not essential to the invention, it is preferred that the carrier material is substantially or completely water-insoluble.

15

Preferred carrier materials are crystalline alkali metal aluminosilicates (zeolites), and according to one preferred embodiment of the invention the granular carrier material comprises at least 76 wt%, preferably at least 80 wt%,
20 alkali metal aluminosilicate. Most preferably the granular carrier material consists essentially of alkali metal aluminosilicate.

