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## Description

This invention relates to soap bars, especially for personal washing, and to their production.

A number of documents record that it would be desirable to incorporate oils giving a skin benefit, e.g. so-called bath oils or emollient oils, into soap bars. There have been a number of proposals for doing this. However US 3941712 explains that the simple incorporation of such oils into milled soap is not possible because it leads to excessively soft bars with an oily feel.

One known procedure for the production of soap bars is to form an isotropic melt containing the soap and various organic solvents and cast the resulting melt directly into bars. This process has the advantage that in only a single step it goes from a shapeless melt of constituents to cast bars having the desired shape. The cast bars do of course contain solvent as well as soap and may be transparent or translucent.

Surprisingly, we have now found that by observing certain constraints on formulation it is possible to incorporate a skin-benefit oil into bars made by this so-called melt-cast route. It is surprising, that the presence of the skin-benefit oil does not prevent the formation of an isotropic solution of the soap in the solvent.

According to a first aspect of the present invention there is provided a soap composition which, aside from any non-detergent particulates, comprises:

25-60% of anionic, nonionic, zwitterionic or amphoteric detergent active including soap of saturated C<sub>16</sub> to C<sub>22</sub> fatty acids in an amount which is 8-32%;

10-50% of one or more alcohols, including one or more solvent alcohols selected from ethanol, propanol, ethylene glycol, 1,2-propane diol, 1,3-propane diol, ethanolamines and propanolamines, the amount of solvent alcohol being 5-30%;

not more than 30% water; and

1-20% of an oily skin-benefit agent,

the above percentages being based on the weight of the composition excluding any dispersed non-detergent particulates.

The present invention also provides a process for the manufacture of soap bars comprising forming an isotropic melt of composition as set forth above and casting the molten composition into solid bars.

The various constituents of the soap composition will now be discussed in turn.

One essential constituent is soap of the saturated C<sub>16</sub> to C<sub>22</sub> fatty acids. The term "fatty acid" signifies monocarboxylic acids. Generally, more than half of this probably substantially all of it will be soap of the saturated C<sub>16</sub> and C<sub>18</sub> fatty acids, which are palmitic and stearic acid respectively. Soaps of these C<sub>16</sub> to C<sub>22</sub> saturated fatty acids are frequently referred to as insoluble soaps because of their poor solubility in water. These provide structural strength in the eventual soap bars. Mixtures of these chain lengths are preferred.

The remainder of the anionic detergent active may consist of soap of other fatty acids which are more soluble and so provide a lather when brought into contact with water. In this event it is preferred that there is from 4% up to 30%, or the balance of the detergent active, if this is less than 30%, of soap of C<sub>10</sub> to C<sub>14</sub> fatty acids and/or unsaturated C<sub>16</sub> to C<sub>22</sub> fatty acids. Soap of these acids is generally referred to as soluble soap. Significant chain lengths, which may contribute at least a majority of the soluble soap and at least 4% of the composition, are C<sub>12</sub>, C<sub>14</sub> and unsaturated C<sub>16</sub> and C<sub>18</sub>.

Since the saturated C<sub>16</sub> to C<sub>22</sub> soaps contribute structural strength and hardness whereas the other detergents, i.e. shorter chain soaps, unsaturated soaps and/or non-soap detergent, contribute to lather generation, it is preferred that both are present and that the saturated C<sub>16</sub> to C<sub>22</sub> soap and the other detergent are in a weight ratio from 3:1 to 1:3, better 2:1 to 1:2 and yet more preferably 1.5:1 to 1:1.5.

The detergent active may also include some non-soap detergent which provides a lather in contact with water. This may be anionic, nonionic, zwitterionic or amphoteric. In particular this may be one of the non-soap detergents known for use in combination with soap in personal washing bars. These include fatty acyl isethionates, acyl taurides, alkyl sarcosinates, mono and dialkyl sulphosuccinates, alkane sulphonates, alkyl ether sulphates, alkyl benzene sulphonates, alkyl sulphates and alpha-olefin sulphonates, having in each case an alkyl or acyl chain comprising 8 to 18 carbon atoms.

If present, it is preferred that nonionic, zwitterionic or amphoteric detergent is used in conjunction with anionic non-soap detergent. Examples of nonionic detergents are alkyl ethoxylates, alkyl polyglutamates, alkyl ethanolamides and amine oxides. Examples of zwitterionics are betaines and amidobetaines. Such materials could act as at least a partial replacement for soluble soap. Accordingly the quantity of detergent active selected from the group consisting of C<sub>12</sub> to C<sub>14</sub> fatty acids, C<sub>16</sub> to C<sub>22</sub> unsaturated fatty acids and non-soap detergent active will generally lie within a range from 4 to 30% (but not exceeding the balance of the detergent active).

Anionic non-soap detergent may be present jointly with soluble soap. The amount of non-soap detergent, if present at all, may lie in a range from 1 to 30% based on the weight of the composition excluding any dispersed non-soap particulates.

Some non-soap detergent actives will solidify to opaque particles on cooling from the molten state. This may be acceptable, but preferably such a detergent has a Krafft point which is not substantially above 40 °C.

The soap which is present, both the insoluble soap of saturated C<sub>16</sub> to C<sub>18</sub> fatty acids and any other soap present may possibly be all or substantially all sodium soap, so that at least 90wt% of even 95 or 97wt% of the soap counter ions are sodium. Alternatively, however, some other counter ions such as potassium and trialkanolammonium may be present. If other counter ions are present they will generally constitute a minor proportion, up to 30 or 40wt% of the soap counter ions present.

The soap may be derived from fats and oils conventionally used in soap making. The fats and oils and the amounts used must be chosen to provide the required quantities of C<sub>16</sub> to C<sub>18</sub> and other soap. A mixture of chain lengths meeting the requirements of this invention can be provided by a conventional soap such as conventional 80 : 20 tallow : coconut soap or by a blend of conventional soaps such as 80 : 20 soap augmented with additional soap made from coconut oil as the only triglyceride source.

Any other alcohol present is preferably a polyhydric alcohol. As already mentioned, the alcohol must at least include solvent alcohol chosen from a small group of short chain monohydric alcohols, short chain diols and alkanolamines with short carbon chains. These materials are good solvents for insoluble soap.

Preferred within this group are ethanol, isopropanol, 1,2-propane diol, triethanolamine and triisopropanolamine.

Various polyhydric alcohols are available and can be used. One possibility is glycerol. A further possibility is a sugar such as sucrose or glucose and yet a further possibility is a sugar derivative such as sorbitol.

Another possibility is polyethylene glycol of fairly low molecular weight, such as about 400. The presence of polyhydric alcohol(s) is believed to help mitigate shrinkage of the bar as it is cast from a melt.

The skin benefit agent is a compound or mixture of compounds which is an oil at room temperature. Generally it will contain at least one C<sub>8</sub> to C<sub>22</sub> saturated aliphatic hydrocarbon chain. More particularly the oily skin benefit agent may be hydrocarbon oil such as petrolatum, mineral oil or nujol; alternatively it may be an ester of a C<sub>8</sub> to C<sub>22</sub> fatty acid and/or a C<sub>8</sub> to C<sub>22</sub> fatty alcohol. Such an ester could be a triglyceride.

The skin benefit oil may in particular be a known emollient and specific possibilities include:

natural oils such as jojoba oil, coconut oil, mink oil, sesame oil, arachis oil, sunflower seed oil, evening primrose oil and castor oil;

hydrocarbons such as nujol, mineral oil and petrolatum;

lanolin and lanolin alcohols;

C<sub>12</sub> - C<sub>24</sub> alcohols such as stearyl alcohol, cetyl alcohol, octadecan-2-ol;

esters of C<sub>8</sub> - C<sub>22</sub> acids and C<sub>21</sub> - C<sub>24</sub> alcohols (including di-acids, diols, tri-acids and triols, not necessarily with all acid-hydroxy groups esterified) such as glyceryl monoricinoleate, glyceryl monostearate, mink oil, isopropyl isostearate, isobutyl palmitate, isocetyl stearate, isopropyl laurate, hexyl laurate, decyl oleate, cetyl palmitate, di-n-butyl sebacate, isopropyl myristate, isopropyl palmitate, isopropyl stearate, butyl stearate, isopropyl linoleate, lauryl lactate, myristyl lactate, decyl oleate, and myristyl myristate.

The amounts of the constituents of a soap bar in accordance with this invention are related to each other. The amount and nature of the solvents needs to be such as to enable dissolution of the soaps while at the same time being sufficiently restricted that the setting temperature is reasonably high such as at least 50 °C.

Increasing the proportion of the saturated C<sub>16</sub> - C<sub>18</sub> soaps increases hardness and reduces the speed at which the bar will dissolve in water during use, hence improving the rate of wear, but also making more demands on the ability of the organic solvents in the composition to dissolve the soap during manufacture. Consequently, when high levels of saturated C<sub>16</sub> - C<sub>18</sub> soaps are present it will be desirable to make use of the most effective solvents, notably triethanolamine and ethanol.

More particularly, the amounts of the constituent materials may fall within one of the following three sets of ranges which represent preferred possibilities with different levels of saturated C<sub>16</sub> - C<sub>18</sub> soap.

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		%	%	%
	Saturated C <sub>16</sub> - C <sub>18</sub> soap :	8-12	12-25	20-32
5	Other detergent :	5-20	10-30	20-30
	Total detergent :	17-32	30-50	45-60
10	Ethanol/isopropanol :	5-15	7-25	5-15
	Triethanolamine :	-	-	6-15
	Polyhydric Alcohol :	15-30	10-30	5-20
15	Water :	20-30	10-20	2-15

In each of these sets of ranges, the weight percentage range for total detergent imposes an additional limitation on the amounts of saturated C<sub>16</sub> - C<sub>18</sub> soap and other detergent. For instance in the middle set of ranges, if there was 12% of saturated C<sub>16</sub> - C<sub>18</sub> soap, at least 18% of other detergent would be needed to achieve the minimum of 30% total detergent.

Soap bars in accordance with this invention may contain various other materials, especially if the amount of them is restricted so as not to exceed 10% or even 5%. In particular a soap composition can contain small amounts of conventional additives, e.g. electrolytes, perfume, preservatives, dyes and pearlescent agents.

Bars according to this invention may include some free fatty acid. However, this provides little advantage and may not be adequately soluble. It is therefore preferred that the amount of free fatty acid in a bar is less than 10%.

A soap composition in accordance with this invention may well be transparent or at least translucent. However, if this property is not required then the soap composition may contain a particulate filler which is insoluble both in water and in the said alcohols. It is possible to add modest proportions of such a filler without it having any serious effect on the behaviour of the remainder of the composition to form a melt with the filler dispersed therein and subsequently to set to solid bars still with the filler dispersed therein. Consequently, percentages of the composition given above are based on the weight of the composition excluding any dispersed non-soap solid particulates. Possible fillers include kaolin, silica and starch. The amount of any particulate filler which is included will generally not exceed 20% by weight of the total composition. Particle sizes desirably lie in the range 1.0 to 20 microns. As mentioned above, some non-soap detergents will also render a bar opaque.

As also briefly mentioned above, a second aspect of the present invention is a method for making soap bars comprising forming a melt of the composition and casting the melt into solid bars, e.g. by casting the melt into moulds and allowing the melt to set.

In order to achieve an isotropic homogeneous and transparent melt the composition is preferably heated to a temperature of between 70 and 90 °C more preferably between 80 and 85 °C, and maintained at such a raised temperature, below the boiling point of the solution, until all solids present have dissolved which is typically between 30 and 60 minutes e.g. 45 minutes. Suitably the cooling can take place at a rate determined by the ambient temperature. If desired, however, forced cooling can be employed.

Suitably the ingredients are added in the form in which they will be present in the final product. If however a particular composition includes a trialkanolamine soap then the starting materials to be added are preferably the equivalent fatty acids and their stoichiometric equivalent of trialkanolamine, which will preferably be present as a proportion of the total trialkanolamine required by the composition having regard to the solvent system. Sodium soaps can either be added as ready made or can be made in situ from fatty acids and sodium hydroxide.

Suitably any perfume and free fatty acids liable to thermal degradation may be added following any heating step and immediately prior to casting the melt into moulds.

Once at least partially set the composition can be removed from the moulds and subjected to any necessary finishing including, if necessary, cutting and/or pressing into a desired final shape, followed by packaging.

Preferably, however, the melt is cast into individual moulds which additionally serve as a means of packaging the resulting soap bar. Removal of the bar from the mould will then occur when the consumer opens the pack immediately prior to use. Such an arrangement has the advantage that no mould removal or separate packaging step is necessarily required during manufacture. Suitably the mould can be filled fully with the melt and air-tightly sealed. The resulting bar can thus have an attractive shape and surface appearance determined by the shape and inner surface of the mould. Providing an air-tight seal additionally inhibits any tendency for any volatile components of the bar to escape during storage.

Examples of items which can act both as a mould and also a package are rigid or semi-rigid plastic boxes such as those described in for example US 3149188 and FR 910256. Alternatively and preferably the melt is cast into packs according to the invention disclosed in our published European patent application EP-A-321179. In this application is disclosed the use of a flexible film as the material from which the pack is made. The molten soap composition is cast directly into the pack which is then air-tightly sealed. The flexible film is preferably shaped or is thermoplastic so that the heat of the melt causes the film pack to adjust to a wrinkle-free fit around the composition, which can if desired be lightly moulded during the time it is setting. The film is preferably transparent so that the resulting product displays the soap bar.

Embodiments of the present invention will now be described by way of the following Examples:

EXAMPLE 1

Bars were prepared with the following two formulations in which percentages are by weight of the final composition. The bars were prepared by the method stated above, in which the ingredients are heated at a temperature of 70 to 90 °C until all are molten, adding perfume after the other ingredients have melted and then casting the melt in moulds.

	1A	1B	1C
	(Comparative)		
Ingredients	wt%	wt%	wt%
Sodium coco-isethionate (75%)	25	22	23.5
Hardened tallow soap	25	22	23.5
Propan-1,2-diol	25	22	23.5
Industrial Methylated spirit	10	9	9.5
Perfume	1	1	1
Water	14	14	14
Iso-propyl myristate	0	10	5

Hardened tallow soap contains almost entirely insoluble soap with a small percentage of soluble short chain soap. Industrial Methylated spirit is 90% ethanol, 10% methanol.

All formulations gave an isotropic transparent melt but opaque bars.

The mildness of the bars of Examples 1A and 1B towards human skin was assessed by a Flex-Wash carried out with a panel of volunteers. Such a test is described in J. Society of Cosmetic Chemists 40 P297-306 Sept/Oct '89. D D Strube, S W Koontz, R I Murahata, R F Thieler. In outline, including differences to the described test, this involved washing the inside of the elbow (Flex Area) for 2 minutes, 3 times per day (for 1 week). Each "Flex Area" was examined for erythema 4 times per day, and scored from 0 (none) to 3 (very severe). If a score reached two, then the panellist stopped washing that Flex area. The scores relate to average cumulative erythema over 5 days. (Discontinued sites were allocated scores of 2 for each subsequent assessment time, after discontinuation, up to the end of the trial period).

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Cumulative erythema scores were

5

Example 1B	20
Example 1A (comparative)	27

This difference exceeded the value (of 5) which was the figure required for statistical significance at 95% level of confidence.

10 Bars were also used to wash the skin of volunteers, after which the effect on moisture content was determined by a test instrument. This used a probe with two concentric metal discs, 1.5 mm apart, which is placed on the skin at the test area. The instrument measures the conductance at an applied voltage at high frequency (3.5 MHz). Higher values indicate more moisture on the skin. Measurements are taken before washing and (20 mins) after, and performance is calculated on the basis of % difference between the readings. Normally washing with soap will lead to a significant reduction in conductance once the skin has 15 equilibrated (e.g. 20 minutes after washing).

The results, i.e. percent reductions in conductance were,

20

Example 1A (comparative)	59%
Example 1B	72%
Example 1C	64%

25 EXAMPLE 2

25

Bars were prepared with the following two formulations, using the same general method as in Example 1.

30

2A 2B  
(comparative)

35

40

45

50

Ingredients	wt%	wt%
Sodium coconut soap	18.5	18
Sodium tallow soap	18.5	18
Palmitic/stearic acid mixture	8	8
Glycerol	15	10
Ethanol	10	9
Triethanolamine	17	16
Perfume	1	1
Water	14	14
Iso-propyl plamitate	0	10

55

The fatty acids were neutralised by the triethanolamine so as to form triethanolammonium soap. The amount of saturated C<sub>16</sub> - C<sub>18</sub> soap in the bars was approximately 20% by weight. The amount of free triethanolamine in the formulation would thus be reduced by about 3 to 5% from the quantity originally incorporated.

Bars with both formulations were translucent.

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The mildness of the bars was assessed in a similar way to Example 1, but using the panellist's forearm rather than the Flex Area.

The skin was scored by an assessor who judged both dryness and erythema (the latter as in Example 1) and assessed by the panellist against a standard scale for overall skin condition. The cumulative results were

	<b>Assessed scores</b>		<b>Perceived by panellist</b>
	<b>Dryness</b>	<b>Erythema</b>	<b>Overall skin condition</b>
<b>Example 2A</b>	<b>8.2</b>	<b>12</b>	<b>2.4</b>
<b>(Comparative)</b>			
<b>Example 2B</b>	<b>6.2</b>	<b>8</b>	<b>4.0</b>
<b>difference for significance.</b>	<b>1.3</b>	<b>6</b>	<b>1.1</b>

The bars of Example 2B were also assessed by panellists in a sensory evaluation comparing them with conventional 80/20 tallow/coconut toilet soap and with the melt cast bars of Example 5A below which did not contain oil but did contain cocoisethionate, which is regarded as a mild detergent.

The test involved 20 panellists using each product in turn to wash their face once a day, and score the product's performance against a series of attributes.

	<b>Average scores for each attribute</b>		
<b>Attribute</b>	<b>80/20 soap</b>	<b>Example 5A</b>	<b>Example 2B</b>
<b>a) In use properties</b>			
<b>greasy lather</b>	<b>47</b>	<b>42</b>	<b>26</b>
<b>product feels greasy in use</b>	<b>59</b>	<b>51</b>	<b>35</b>
<b>b) Skin feel 10 mins after use</b>			
<b>Face feels tight</b>	<b>46</b>	<b>45</b>	<b>35</b>
<b>Moisturised</b>	<b>40</b>	<b>39</b>	<b>44</b>
<b>Irritated</b>	<b>17</b>	<b>19</b>	<b>11</b>

Hence the oil containing bar felt non-greasy in use, but reduced the negative feelings of harshness after use.

EXAMPLE 3

Bars were prepared with the following two formulations, using the same general method as before.

5	<b>3A</b>	<b>3B</b>
	<b>(Comparative)</b>	
10	<b>Ingredients</b>	<b>wt%</b>
	<b>Sodium soaps 80/20</b>	<b>18</b>
	<b>tallowate/cocoate</b>	<b>18</b>
15	<b>Sodium Coconut soap</b>	<b>18</b>
	<b>Palmitic/stearic acid</b>	<b>8</b>
20	<b>Ethanol</b>	<b>9</b>
	<b>Triethanolamine</b>	<b>16</b>
	<b>Iso-propyl palmitate</b>	<b>0</b>
25	<b>Glycerol</b>	<b>15.5</b>
	<b>Water</b>	<b>10.5</b>
	<b>15.5</b>	<b>10.5</b>

30 The amount of saturated C<sub>16</sub> - C<sub>18</sub> soap in these bars was approximately 20%. The amount of free triethanolamine in the formulation would thus be reduced by about 3 to 5% from the quantity originally incorporated.

The bars were used to wash the skin of volunteers, and the effect on moisture content was determined by a test instrument as in Example 1.

35 Percent reductions in conductance were

Example 3A (comparative)	66
Example 3B	85

40 These bars, and bars of 80/20 tallow/coconut soap were tested for bar properties by the following procedure;

The test bars are weighed, then washed down 8 times per day for 4 days. This involves a panellist twisting the bar with (plastic) gloved hands 18 times, dipping in water at 30 °C before and after twisting. The bars are stored on drained soap trays between washes. They are left overnight before assessment. The softness of the underside of the bar referred to as 'mush' is assessed on a scale ranging from no softness, scored as 0, to completely softened scored as 10. The bars are left for two days, and then weighed, from which the percentage weight loss is determined (referred to as "% rate of wear").

50 The bars were also tested by a procedure in which samples are left partially submerged in water under standardised conditions, the soft material is then scraped off the sample surface, and the percentage weight loss determined.

55

Results were:

	80/20 soap	3A	3B
5 Subjective mush	4.2	5.7	5.7
% rate of wear	22%	23%	24%
10 Immersion weight	5.1	10.6	9.2
loss (gm)			

15 These results show that the bars made by the melt/cast route form more mush, but the inclusion of isopropyl palmitate makes very little difference to these in-use properties tested.

#### EXAMPLE 4

20 Bars were prepared, by the same general method, with the formulations stated below. All the compositions gave isotropic transparent melts and the bars were translucent. Reduction in conductance was assessed as in Example 1 and the results are quoted below.

Ingredients	wt%				
25 Sodium soaps 82/18	40	39.2	38	36	36
tallowate/cocoate					
30 Sucrose	20	19.6	19	18	18
Ethanol	10	9.8	9.5	9	9
Propan-1,2-diol	10	9.8	9.5	9	9
35 Perfume	2	2	1.9	1.8	1.8
Water	19	18.7	18	17.1	17.1
40 Isopropyl myristate	-	2	5	10	-
Mineral oil	-	-	-	-	10
45 % reduction in conductance	58	63	72	75	80

50 (40% of 82/18 tallow/coconut soap provides approximately 16% of saturated C<sub>16</sub> - C<sub>18</sub> soap).

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EXAMPLE 5

Bars were prepared, by the same general method, with the formulations stated below.  
 All the compositions gave isotropic transparent melts; the bars were opaque.  
 Reduction in conductance was assessed as in Example 1 and the results are quoted below.

	5A	5B
	(Comparative)	
<b>Ingredients</b>	<b>wt%</b>	<b>wt%</b>
Sodium coco-isethionate (75%)	20	19
Hardened tallow soap	20	19
Sorbitol	24	22.8
Industrial methylated spirit	24	22.8
Water	12	11.4
Isopropyl myristate	0	5
<b>% reduction in conductance</b>	<b>60</b>	<b>74</b>

**Claims**

1. A soap composition which comprises:
  - 25-60% of anionic, nonionic, zwitterionic or amphoteric detergent active including soap of saturated C<sub>16</sub> to C<sub>22</sub> monocarboxylic acids in an amount which is 8-32%;
  - 10-50% of one or more alcohols, including one or more solvent alcohols selected from ethanol, propanol, ethylene glycol, 1,2-propane diol, 1,3-propane diol, ethanolamines and propanolamines, the amount of solvent alcohol being 5-30%;
  - not more than 30% water; and
  - 1-20% of an oily skin-benefit agent,
 the above percentages being based on the weight of the composition excluding any dispersed non-detergent particulates.
2. A composition as claimed in claim 1 comprising soap of C<sub>10</sub> to C<sub>14</sub> monocarboxylic acids and/or unsaturated C<sub>16</sub> to C<sub>22</sub> monocarboxylic acids, in an amount from 4% to 30% based on the weight of the composition excluding any dispersed non-detergent particulates.
3. A composition as claimed in claim 1 or claim 2 comprising non-soap detergent in an amount from 1% to 30% based on the weight of the composition excluding any dispersed non-detergent particulates.
4. A composition as claimed in any one of claims 1 to 3 wherein the said solvent alcohol is selected from the group consisting of ethanol, isopropanol, 1,2-propane diol, triethanolamine and trisopropanolamine.
5. A composition as claimed in any one of claims 1 to 4 wherein the said oily skin benefit agent is a hydrocarbon, a triglyceride or other ester of a C<sub>8</sub> to C<sub>22</sub> monocarboxylic acid and/or a C<sub>8</sub> to C<sub>22</sub> monohydric alcohol.
6. A composition as claimed in any one of claims 1 to 5 wherein the composition comprises:

- (i) 8 - 12% of soap of saturated C<sub>16</sub> to C<sub>18</sub> monocarboxylic acids;  
(ii) 5 - 20% of other anionic detergent;  
(iii) 5 - 15% of ethanol or isopropanol;  
(iv) 15 - 30% of polyhydric alcohol;  
5 (v) 20 - 30% of water;  
the total of (i) and (ii) being from 17 - 32% and the above percentages being based on the weight of the composition excluding any dispersed non-detergent particulates.
7. A composition as claimed in any one of claims 1 to 5 wherein the composition comprises:  
10 (i) 12 - 25% of soap of saturated C<sub>16</sub> to C<sub>18</sub> monocarboxylic acids;  
(ii) 10 - 30% of other anionic detergent;  
(iii) 7 - 20% of ethanol or isopropanol;  
(iv) 10 - 30% of polyhydric alcohol;  
(v) 10 - 20% of water;  
15 the total of (i) and (ii) being from 30 - 50% and the above percentages being based on the weight of the composition excluding any dispersed non-detergent particulates.
8. A composition as claimed in any one of claims 1 to 5 wherein the composition comprises:  
20 (i) 20 - 32% of soap of saturated C<sub>16</sub> to C<sub>18</sub> monocarboxylic acids;  
(ii) 20 - 30% of other anionic detergent;  
(iii) 5 - 15% of ethanol or isopropanol;  
(iv) 6 - 15% of triethanolamine;  
(v) 5 - 20% of polyhydric alcohol;  
25 (vi) 2 - 15% of water;  
the total of (i) and (ii) being from 45 - 60% and the above percentages being based on the weight of the composition excluding any dispersed non-detergent particulates.
9. A cast bar of an composition as claimed in any one of the preceding claims.
- 30 10. A process for the manufacture of soap bars comprising forming an isotropic melt of a composition as claimed in any one of claims 1 to 8, and casting the molten composition into solid bars.

### Patentansprüche

- 35 1. Seifenzusammensetzung, enthaltend:  
25 bis 60 % anionisches, nichtionisches, zwitterionisches oder amphoterer aktives Waschmittel, enthaltend Seife von gesättigten C<sub>16-22</sub>-Monocarbonsäuren in einer Menge, die 8 bis 32 % beträgt,  
10 bis 50 % von einem oder mehreren Alkoholen, einschliessend einen oder mehrere lösende Alkohole, ausgewählt aus Ethanol, Propanol, Ethylenglykol, 1,2-Propandiol, 1,3-Propandiol, Ethanolaminen und Propanolaminen, wobei die Menge des lösenden Alkohols 5 bis 30 % beträgt,  
40 nicht mehr als 30 % Wasser, und  
1 bis 20 % eines öligen für die Haut vorteilhaften Mittels, wobei die oben angegebenen Prozentsätze auf dem Gewicht der Zusammensetzung basieren, ausschliesslich irgendwelcher dispergierter Nicht-Waschmittel-Makroteilchen.
- 45 2. Zusammensetzung nach Anspruch 1, enthaltend Seife der C<sub>10-14</sub>-Monocarbonsäuren und/oder der ungesättigten C<sub>16-22</sub>-Monocarbonsäuren in einer Menge im Bereich von 4 % bis 30 %, bezogen auf das Gewicht der Zusammensetzung, ausschliessend irgendwelche dispergierte Nicht-Waschmittel-Makroteilchen.
- 50 3. Zusammensetzung nach Anspruch 1 oder Anspruch 2, enthaltend Nicht-Seife-Waschmittel in einer Menge von 1 % bis 30 %, bezogen auf das Gewicht der Zusammensetzung, ausschliessend irgendwelche dispergierte Nicht-Waschmittel-Makroteilchen.
- 55 4. Zusammensetzung nach einem der Ansprüche 1 bis 3, worin der genannte lösende Alkohol aus der Gruppe bestehend aus Ethanol, Isopropanol, 1,2-Propandiol, Triethanolamin und Triisopropanolamin ausgewählt ist.

5. Zusammensetzung nach einem der Ansprüche 1 bis 4, worin das erwähnte ölige, für die Haut vorteilhafte Mittel ein Kohlenwasserstoff, ein Triglycerid oder ein anderer Ester einer  $C_{8-22}$ -Monocarbonsäure und/oder ein einwertiger  $C_{8-22}$ -Alkohol ist.
- 5 6. Zusammensetzung nach einem der Ansprüche 1 bis 5, worin die Zusammensetzung enthält:  
 (i) 8 bis 12 % Seife von gesättigten  $C_{16-18}$ -Monocarbonsäuren,  
 (ii) 5 bis 20 % von anderem anionischen Waschmittel,  
 (iii) 5 bis 15 % Ethanol oder Isopropanol,  
 (iv) 15 bis 30 % Polyalkohol,  
 10 (v) 20 bis 30 % Wasser,  
 wobei die Gesamtmenge von (i) und (ii) von 17 bis 32 % beträgt und die obigen Prozentsätze auf dem Gewicht der Zusammensetzung basieren, ausschließend irgendwelche dispergierte Nicht-Waschmittel-Makroteilchen.
- 15 7. Zusammensetzung nach einem der Ansprüche 1 bis 5, worin die Zusammensetzung enthält:  
 (i) 12 bis 25 % Seife von gesättigten  $C_{16-18}$ -Monocarbonsäuren,  
 (ii) 10 bis 30 % von anderem anionischen Waschmittel,  
 (iii) 7 bis 20 % Ethanol oder Isopropanol,  
 (iv) 10 bis 30 % Polyalkohol,  
 20 (v) 10 bis 20 % Wasser,  
 wobei die Gesamtmenge von (i) und (ii) von 30 bis 50 % beträgt und die obigen Prozentsätze auf dem Gewicht der Zusammensetzung basieren, ausschließend irgendwelche dispergierte Nicht-Waschmittel-Makroteilchen.
- 25 8. Zusammensetzung nach einem der Ansprüche 1 bis 5, worin die Zusammensetzung enthält:  
 (i) 20 bis 32 % Seife von gesättigten  $C_{16-18}$ -Monocarbonsäuren,  
 (ii) 20 bis 30 % von anderem anionischen Waschmittel,  
 (iii) 5 bis 15 % Ethanol oder Isopropanol,  
 (iv) 6 bis 15 % Triethanolamin,  
 30 (v) 5 bis 20 % Polyalkohol,  
 (vi) 2 bis 15 % Wasser,  
 wobei die Gesamtmenge von (i) und (ii) von 45 bis 60 % beträgt und die obigen Prozentsätze auf dem Gewicht der Zusammensetzung basieren, ausschließend irgendwelche dispergierte Nicht-Waschmittel-Makroteilchen.
- 35 9. Gegossener Riegel einer Zusammensetzung nach irgendeinem der vorhergehenden Ansprüche.
10. Verfahren zur Herstellung eines Seifenriegels, enthaltend die Bildung einer isotropen Schmelze einer Zusammensetzung nach einem der Ansprüche 1 bis 8 und Gießen der geschmolzenen Zusammensetzung in feste Riegel.  
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## Revendications

1. Une composition de savon comprenant :  
 45 25 à 60 % de matière détergente active anionique, non ionique, zwitterionique ou amphotère contenant du savon d'acides monocarboxyliques saturés en  $C_{16}$  à  $C_{22}$  dans une quantité comprise entre 8 et 32 %;  
 10 à 50 % d'un alcool ou de plusieurs, y compris un ou plusieurs alcools solvants sélectionnés parmi l'éthanol, le propanol, l'éthylène glycol, le 1,2-propanediol, le 1,3-propanediol, les éthanolamines et les propanolamines, la quantité de l'alcool solvant étant comprise entre 5 et 30 % ;  
 50 pas plus de 30 % d'eau ; et  
 1 à 20 % d'un agent huileux bénéfique pour la peau,  
 les pourcentages ci-avant étant basés sur la masse de la composition à l'exclusion de toute matière particulaire non détergente dispersée.
- 55 2. Une composition telle que revendiquée dans la Revendication 1, comprenant un savon d'acides monocarboxyliques en  $C_{10}$  à  $C_{14}$  et/ou d'acides monocarboxyliques insaturés en  $C_{16}$  à  $C_{22}$ , dans une quantité comprise entre 4 % et 30% sur la base de la masse de la composition et à l'exclusion de

toute matière particulaire non détergente dispersée.

- 5 3. Une composition telle que revendiquée dans la Revendication 1 ou la Revendication 2, comprenant un détergent sans savon dans une quantité comprise entre 1 % et 30 % sur la base de la masse de la composition et à l'exclusion de toute matière particulaire non détergente dispersée.
- 10 4. Une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 3, dans laquelle ledit alcool solvant est sélectionné parmi le groupe composé de l'éthanol, de l'isopropanol, du 1,2-propanediol, de la triéthanolamine et de la triisopropanolamine.
- 15 5. Une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 4, dans laquelle ledit agent huileux bénéfique pour la peau est un hydrocarbure, un triglycéride ou un autre ester d'acide monocarboxylique en  $C_8$  à  $C_{22}$  et/ou un alcool monovalent en  $C_8$  à  $C_{22}$ .
- 20 6. Une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 5, dans laquelle la composition comprend :
- (i) 8 à 12 % de savon d'acides monocarboxyliques saturés en  $C_{16}$  à  $C_{18}$  ;
  - (ii) 5 à 20 % d'autre détergent anionique ;
  - (iii) 5 à 15 % d'éthanol ou d'isopropanol ;
  - (iv) 15 à 30 % d'alcool polyvalent ;
  - (v) 20 à 30 % d'eau ;
- le total de (i) et de (ii) étant compris entre 17 et 32 % et les pourcentages susmentionnés étant basés sur la masse de la composition à l'exclusion de toute matière particulaire non détergente dispersée.
- 25 7. Une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 5, dans laquelle la composition comprend :
- (i) 12 à 25 % de savon d'acides monocarboxyliques saturés en  $C_{16}$  à  $C_{18}$  ;
  - (ii) 10 à 30 % d'autre détergent anionique ;
  - (iii) 7 à 20 % d'éthanol ou d'isopropanol ;
  - (iv) 10 à 30 % d'alcool polyvalent ;
  - (v) 10 à 20 % d'eau ;
- le total de (i) et de (ii) étant compris entre 30 et 50 % et les pourcentages susmentionnés étant basés sur la masse de la composition à l'exclusion de toute matière particulaire non détergente dispersée.
- 30 8. Une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 5, dans laquelle la composition comprend :
- (i) 20 à 32 % de savon d'acides monocarboxyliques saturés en  $C_{16}$  à  $C_{18}$  ;
  - (ii) 20 à 30 % d'autre détergent anionique ;
  - (iii) 5 à 15 % d'éthanol ou d'isopropanol ;
  - (iv) 6 à 15 % de triéthanolamine ;
  - (v) 5 à 20 % d'alcool polyvalent ;
  - (vi) 2 à 15 % d'eau ;
- le total de (i) et de (ii) étant compris entre 45 et 60 % et les pourcentages susmentionnés étant basés sur la masse de la composition à l'exclusion de toute matière particulaire non détergente dispersée.
- 45 9. Un pain moulé d'une composition telle que revendiquée dans l'une quelconque des Revendications précédentes.
- 50 10. Un procédé de fabrication de pains de savon comprenant les étapes consistant à former un mélange fondu isotrope d'une composition telle que revendiquée dans l'une quelconque des Revendications 1 à 8, et à mouler la composition fondue pour donner des pains solides.
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