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(54) **Cleansing bar with high levels of liquid and particulate silica**

(57) Cleansing bars are formed from compositions containing a liquid phase, particulate silica and a soap or synthetic detergent based cleansing agent. The particulate silica is present in an amount to provide sufficient hardness to the composition to facilitate processing into a bar while maintaining good foaming despite a high liquid content. The liquid phase includes at least one oil, polyol or oil and wax mixture.

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Description**FIELD OF THE INVENTION**

5 [0001] This disclosure relates generally to personal cleansing bars with lathering detergents and/or soaps. The bars have a high liquid content in combination with lathering additives and particulate silica to give the bars a desirable consistency.

DESCRIPTION OF THE RELATED ART

10 [0002] Personal cleansing with mild surface-active cleansing bar preparations has become a focus of great interest. The processability and smear properties of such bars have become a focus of even greater interest.

[0003] The fabrication of relatively pure "soap" bars is a well-worked-out engineering procedure involving milling, plodding and molding. Coco/tallow soap becomes quite plastic when warmed and can be easily plodded and molded under 15 relatively low pressures. However, bars made with certain mild surfactants are very difficult to fabricate. The problems of formulating such bars are not limited to the performance characteristics of the finished bars. Thus, problems associated with mild synthetic detergent bars include bar processability, firmness, smear and mildness.

[0004] For example, most synthetic detergents and detergent-filler combinations do not become plastic and the machinery for fabrication must be specially designed. See e.g., U.S. Patent No. 2,678,921.

20 [0005] Ideal processing should be fast and problem free in terms of milling, plodding and molding toilet bar formation. Most mild bar processings fall short in this respect.

[0006] Major drawbacks of most synthetic surfactant toilet bar formulations are harshness, poor lather, poor smear, and poor processability due to stickiness. It will be appreciated that processability, firmness, smear, mildness, lather, and rinsability make surfactant selection for mild personal cleansing bars a delicate balancing act. Thus, rather stringent 25 requirements for formulating mild personal cleansing bars limit the choice of surfactants, and final formulations represent some degree of compromise. Mildness is often obtained at the expense of processability, effective cleansing, lathering, or rinsing, or vice versa. Processability is often obtained at the expense of smear.

[0007] A superior processable mild personal cleansing bar formulation with good mildness, good smear, good lather potential and good rinsability is difficult to formulate, but would be highly desirable.

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SUMMARY OF THE INVENTION

[0008] It has now been discovered that particulate silica in certain ratios with emollients like oils, waxes, petrolatum, esters and/or humectants like polyols, e.g., glycerine, propylene glycol, polyethylene glycol, sorbitol, etc. and/or water 35 in combination with detergent and/or soap additives can be formulated into cleansing bars of good hardness and acceptable processing characteristics. A unique feature of such compositions is that the high levels of the oil or liquid humectant phase provide functional benefits to skin by providing good foam without defatting the skin and also allowing the deposit of a residue with active ingredients. Silica gives the bar the necessary properties for commercial fabrication.

[0009] A novel finding of these compositions is the effect of particulate silica having a high surface area on detergents 40 from the groups consisting of sodium acyl isethionate, sodium alpha olefin sulfonates, disodium alkyl sulfosuccinate, soap base, tallow and coco sodium salts, and mixtures thereof, which produces a hard processable cleansing bar. Silica in the presence of these detergents, soaps and blends thereof,

hardens the bars significantly. The hardening effect desirable for processing is observed at silica contents of a minimum of 1 part silica to 10 parts of liquid on a w/w basis, varying according to the particular liquids and waxes employed.

45 [0010] Particularly useful embodiments of the present cleansing bar compositions contain: a liquid phase consisting of either mineral, vegetable oils or polyols with or without the addition of waxes; amorphous silica; and soap, detergent or a mixture thereof. The composition is capable of foaming when combined with water during use. The present compositions provide formulations of a flowable phase of liquids, or of oils or of oils and waxes and silica which, upon combination with soap and/or detergents can be processed and stamped into a cleansing bar.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] This disclosure relates generally to formulations of cleansing bars having high liquid and particulate silica content and containing levels of a suitable hardening agent or agents in combination with soap and/or detergents and addi- 55 tives that give the bars a desirable consistency. More particularly, this disclosure is concerned with the discovery that cleansing bars with soap and/or detergents and high levels of oils or high levels of polyols or water can be formulated properly and fabricated using well-established equipment and procedures. In contrast, most synthetic detergents and detergent-filler combinations that are presently available do not become plastic and modifications have to be made to

the manufacturing equipment and fatty acids and soap-like ingredients have to be added for suitable manufacturing.

[0012] The use of oils, polyols, water and other materials like petrolatum, paraffin and waxes is well known in the fabrication of bars. However, because of their foam suppressing and softening properties, the use of oils and waxes is limited to low levels in cleansing bars. Furthermore, the use of oils, waxes and polyols in synthetic detergent bars softens the product, making it very difficult to prepare a suitable commercial bar. A novel finding of the compositions described herein is that silica when used in certain ratios in the liquid phase, allows the preparation of cleansing bars that can be processed using established manufacturing methods while aiding with the foaming characteristics of the bars.

[0013] The first component of the compositions described herein is a liquid phase which contains oils, and/or polyols and optionally waxes. The oils can be mineral oils which are a purified mixture of liquid hydrocarbons obtained from petroleum. Normally, mineral oils are a mixture of oils of the methane series having the general formula C_nH_{2n+2} . Alternatively, the oils can be of vegetable origin, that is extracted from the seeds, fruits or leaves of plants and generally considered to be mixtures of mixed glycerides (e.g., sesame, avocado, olive, cottonseed, etc.). Mixtures of vegetable and mineral oils can also be used in the oil phase. The oils can be modified by the addition of paraffinic and microcrystalline waxes. A particularly useful oil phase is petrolatum. Petrolatum is a combination of mineral oils and wax which forms a white to faintly yellow unctuous mass of well recognized pharmaceutical properties. The preferred white petrolatum USP has a density of from about 0.82 to about 0.865, a melting point of from about 38E to 54EC and a refractive index of from about 1.460 to 1.474. The polyols can be glycerine, corn syrup, propylene glycol, dibutylene glycol, dipropylene glycol or other liquid polyfunctional alcohols. As exemplified hereinafter, in certain embodiments, the liquid phase contains no added water.

[0014] In particularly useful embodiments, the liquid phase constitutes from about 15 to about 45 percent by weight of the final composition. Preferably, the liquid phase is from about 20 to about 40 weight percent of the final composition.

[0015] The second component of the present compositions is an effective amount of silica. Silica gives the liquid phase an appropriate degree of solid characteristic so that the resulting mixture can be processed with soaps, detergents or mixtures thereof. Any particulate silica having a surface area greater than about 75 m²/g is suitable. Preferably, the particulate silica is amorphous and has a surface area of greater than 100 m²/gm. A particularly useful amorphous silica is fumed silica. Fumed silica is fumed silicon oxide, SiO₂, a material which is produced by the hydrolysis of silicon tetrachloride vapor in a flame of hydrogen and oxygen. In the combustion process, molten spheres of silica are formed with extremely small particle size and enormous surface area. The resulting fumed silica is a fluffy white powder of very low bulk density, from 2.5 to 5 lbs./ft³ and a surface area from 10 to 380 m²/gm. Other silicas having the desired surface area are also suitable; such as, for example precipitated silicas or silica fume.

[0016] The particulate silica should be present in the composition in an amount sufficient to harden the composition. The hardness of the composition is conveniently ascertained by measuring penetration value as described more fully hereinafter. The ratio of liquid phase to silica is preferably greater than about 2:1 more preferably in the range of about 4:1 to about 10:1. In particularly useful embodiments, the effective amount of particulate silica will range from about 3 percent by weight of the final composition to about 20 percent by weight of the final composition. Preferably, from about 3 to about 15 weight percent silica is present.

[0017] The third component of the present composition is a cleansing agent, e.g., a soap, a detergent or a mixture thereof. In a mixture with the other components described above, a composition is produced that can be processed and stamped into a cleansing bar and when combined with water exhibits foaming behavior. A particularly useful soap base suitable for personal care is a blend of tallow and coco sodium salts (80/20). Representative classes of detergents which have been found to be useful are the sodium acyl isethionates, the sodium alpha olefin sulfonates and disodium alkyl sulfosuccinates. However, this disclosure is not limited to these detergents.

[0018] The amount of cleansing agent included in the composition will vary depending on the exact detergent chosen, the identity of other components employed, and the desired physical and performance characteristics to be achieved. Normally, however, the amount of cleansing agent in particularly useful embodiments will range from about 25 to about 85 percent by weight of the final composition. Preferably, the cleansing agent is present in an amount from about 40 to about 75 percent by weight of the final composition.

[0019] The detergent chosen should be mild to the skin and relatively unaffected by ions which might be present in hard water. An unusual finding in connection with the compositions of this disclosure is that when adding silica to oils or oils and waxes (preferably molten), and/or polyols and processing the resulting composition through a blade blender and a screw mixer, the resulting mass can be compacted into a solid that has similar hardness characteristics as compacted soaps, detergents or mixtures thereof. This allows the blend of oils or oils and waxes and/or polyols and silica to be added to the soap, detergent or mixtures thereof without the resulting softening characteristics of adding oils by themselves.

[0020] In addition to the foregoing components, foam boosters may be incorporated into the present compositions. Suitable foam enhancers include potassium polymetaphosphate, sodium lauryl sulfoacetate, sodium lauryl sulfate, sodium lauryl sarcosinate, acyl glutamate and amides. These materials will enhance the foam produced when the present compositions are exposed to water during use.

[0021] The compositions may also contain conventional additives such as fragrance, color, fillers, preservatives, etc. Additionally, active ingredients may be incorporated in the present compositions. Such active ingredients include, but are not limited to deodorants, medicaments such as, for example coal-tar, benzoyl peroxide, vitamin A and vitamin E, and antibacterial ingredients such as, for example, triclosan, PVP-iodine, salicylic acid and sunscreens. The amount of active ingredient included in the present compositions should be an "effective amount" by which it is meant an amount sufficient to achieve a desired effect. The precise amount that is effective will depend upon the particular active ingredient and the desired effect to be achieved. Normally, an effective amount will be from about 0.001 to about 10 weight percent, more preferably from about 0.01 to about 5.0 weight percent.

[0022] The order of addition of the ingredients of the present compositions is not critical. The compositions described herein are preferably prepared by first mixing the ingredients of the liquid phase. Silica is then added to the liquid phase. Heating and vigorous mixing may be used to aid in providing a homogenous liquid/silica composition. Next, the cleansing agent is added to and mixed with the liquid/silica mixture. At this point, the composition can be pelletized, if desired. Finally, any additives (fragrance, filler, active ingredient, etc.) are added to the composition. In certain particularly useful embodiments, the composition from which the cleansing bar is formed contains less than about 10% by weight of added water. Once prepared, the composition can be formed into a bar using known techniques. One such technique is described, for example, in U.S. Patent No. 4,812,253, the disclosure of which is incorporated herein by this reference.

EXAMPLES 1-4

[0023] Examples 1-4 present formulations of the compacted mass that is produced when fumed silica and petroleum jelly are mixed and properly processed.

[0024] The compositions of Examples 1 to 4 show the effect that changing the ratios of silica to petrolatum has on the consistency of the compacted mass. Comparative example A has been included to show the consistency of pure petrolatum. The petroleum jelly employed in the Examples was designated White Petrolatum USP, G1951, and is commercially available from Witco, Greenwich, CT. The silica used in the Examples presented herein is a fumed silica sold under the trademark CAB-O-SIL, available from Cabot Corp., Tuscola, Ill. The results are presented in Table I.

Table I

Example No.	A	1	2	3	4
Petroleum Jelly USP	100.0	83.3	79.4	74.6	66.6
Fumed Silica	0.0	16.7	20.6	25.4	33.3
R=Si/PJ	0.0	0.2	0.26	0.34	0.5
Penetration Value (mmx10)	260.0	80.0	48.0	28.0	15.0

[0025] The consistency of the resulting paste or solid is tested using a Penetrometer (Universal Penetrometer, ASTM, (Precision 73510), Catalog No. 33541, Macalaster Bicknell Company of Connecticut, Inc., New Haven, Connecticut) which was equipped with a 300g cone. The amount of penetration of the cone into the sample was displayed by, and read off, the penetrometer in units of mm x 10. A lower penetration value indicates a harder mass. The samples were compacted by adding 20g of mixture to a die punch. The pasty or powdery mixture was then compressed to form discs 12" wide by 5/8" high. Preferably, the compositions of this invention have penetration values of less than about 50 mm x 10. The compositions preferably have a ratio of silica to oil phase greater than about 0.1.

EXAMPLES 5-8

[0026] Examples 5-8 present formulations of the compacted mass that is produced when fumed silica and glycerin are mixed and properly processed.

[0027] The compositions of Examples 5-8 show the effect that changing the ratios of silica to glycerin has on the consistency of the compacted mass. Comparative example B has been included to show the consistency of pure glycerin. The glycerin employed in the Examples was designated glycerin USP, 99.5% and is commercially available from Ruger Chemical, 83 Cordier Street, Irvington, N.J. The consistency of the compositions, tested as previously described, are reported in Table II. The glycerine-based compositions in accordance with this disclosure preferably have a silica to glycerine ratio greater than about 0.25.

Table II

Example No.	B	5	6	7	8
Glycerin 99.5 USP	100.0	83.3	79.4	74.6	66.6
Fumed Silica	0.0	16.7	20.6	25.4	33.3
R=Si/glycerine	0.0	0.2	0.26	0.34	0.5
Penetration Value (mmx10)	Liquid	200+	50	10	10

EXAMPLES 9-20

[0028] Examples 9 to 20 present the hardness of the compacted mass that is produced when fumed silica, petroleum jelly and soap are mixed and properly processed. The consistency of the resulting paste or solid is tested as previously described, that is by using a Penetrometer and measuring the hardness of the resulting 20g disc. Comparative examples C, D and E have been included to show the consistency of the commercial soap base with petrolatum and no fumed silica. The results are present in Table III.

Table III

Example No.	C	9	10	11	12
Petroleum Jelly USP	20.0	20.0	20.0	20.0	20.0
Fumed Silica	0.0	4.0	5.0	6.67	10.0
Soap Base*	80.0	76.0	75.0	73.33	70.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	80.0	35.0	28.0	25.0	15.0
Example No.	D	13	14	15	16
Petroleum Jelly USP	30.0	30.0	30.0	30.0	30.0
Fumed Silica	0.0	6.0	7.5	10.0	15.0
Soap Base*	70.0	64.0	62.5	60.0	55.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	135.0	58.0	45.0	28.0	15.0
Example No.	E	17	18	19	20
Petroleum Jelly USP	40.0	40.0	40.0	40.0	40.0
Fumed Silica	0.0	8.0	10.0	13.3	20.0
Soap Base*	60.0	52.0	50.0	46.7	40.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	270.0	65.0	50.0	28.0	15.0

*Commercial soap base composition containing:

Sodium Tallowate	68%
Sodium Cocoate	17.0%
Water	12.5
Glycerin	1.0
Pentasodium Pentetate	<1.0
Tetrasodium etidronate	<1.0

[0029] The resulting mixtures required at least 1 part of fumed silica for 10 parts of petroleum jelly for the bars with the lower levels of petroleum jelly (20%) to have a penetration of approximately 50mm x 10. Higher levels of petroleum jelly (40%) require 1 part of fumed silica to 4 parts of petroleum jelly to the hardness of the bars to values of 50mm x 10. It will be pointed out that the hardness of the soap mass processed without fumed silica and without petroleum jelly is 15mm x 10. This value is approached by all the blends of petroleum jelly, silica and soap, once the ratio of fumed silica to petroleum jelly has a value of 0.5, or higher.

EXAMPLES 21-32

[0030] Examples 21-32 present the hardness of the compacted mass that is produced when fumed silica, glycerin and soap are mixed and properly processed. The consistency of the resulting paste or solid is tested as previously described, that is by using a Penetrometer and measuring the hardness of the resulting 20g disc. Comparative examples F, G, and H have been included to show the consistency of the commercial soap base with glycerin and no filmed silica. The results are presented in Table IV.

Table IV

Example No.	F	21	22	23	24
Glycerin 99.5 USP	20.0	20.0	20.0	20.0	20.0
Fumed Silica	0.0	4.0	5.0	6.67	10.0
Soap Base*	80.0	76.0	75.0	73.33	70.0
R=Si/Glycerine	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	too soft to test	43.0	22.0	19.0	9.0

Table IV - cont'd.

Example No.	G	25	26	27	28
Glycerin 99.5 USP	30.0	30.0	30.0	30.0	30.0
Fumed Silica	0.0	6.0	7.5	10.0	15.0
Soap Base**	70.0	64.0	62.5	60.0	55.0
R=Si/Glycerine	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	Too soft to test	50.0	41.0	27.0	10.0

Example No.	H	29	30	31	32
Glycerine 99.5 USP	40.0	40.0	40.0	40.0	40.0
Fumed Silica	0.0	8.0	10.0	13.3	20.0
Soap Base*	60.0	52.0	50.0	46.7	40.0
R=Si/Glycerine	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	Too soft to test	135.0	110.0	36.0	24.0

**Commercial soap base composition containing:

Sodium Tallowate	68%
Sodium Cocoate	17.0%
Water	12.5
Glycerin	1.0
Pentasodium Pentetate	<1.0
Tetrasodium etidronate	<1.0

[0031] The resulting mixtures required at least about 1 part of fumed silica for 5 parts of glycerin for the bars with the lower levels of glycerin (20%) to have a penetration of approximately 50 mm x 10 or less. Higher levels of glycerin (40%) require at least about 1 part of fumed silica in 3 parts of glycerin for bars with penetration values lower than 50 mm x 10. The hardness of the soap mass without silica and without glycerin added is approached by all blends of glycerin,

silica, and soap, once the ratio Si/Glycerine is 0.5 or higher.

EXAMPLES 33-44

- 5 **[0032]** Examples 33-44 present the penetration values of the compacted mass that is produced when fumed silica, petroleum jelly and a commercial blend of syndet and soap are mixed and properly processed. The consistency of the paste or solid is tested as previously described. Comparative examples I, J and K have been included to show the consistency of the commercial soap/syndet base with petrolatum and no fumed silica.

Table V

Example No.	I	33	34	35	36
Petroleum Jelly USP	20.0	20.0	20.0	20.0	20.0
Fumed Silica	0.0	4.0	5.0	6.67	10.0
Soap/Syndet Base***	80.0	76.0	75.0	73.33	70.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	90.0	35.0	30.0	23.0	15.0
Example No.	J	37	38	39	40
Petroleum Jelly USP	30.0	30.0	30.0	30.0	30.0
Fumed Silica	0.0	6.0	7.5	10.0	15.0
Soap/Syndet Base***	70.0	64.0	62.5	60.0	55.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Volume (mmx10)	115.0	51.0	42.0	27.0	15.0
Example No.	K	41	42	43	44
Petroleum Jelly USP	40.0	40.0	40.0	40.0	40.0
Fumed Silica	0.0	8.0	10.0	13.3	20.0
Soap/Syndet Base***	60.0	52.0	50.0	46.7	40.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	120.0	55.0	43.0	30.0	15.0

***Soap/Syndet commercial base, as follows:

Sodium cocoylisethionate 45%

Stearic acid 30.0

Sodium Tallowate 10.0

Water 5.0

Sodium stearate 3.0

Sodium cocoate 2.0

Sodium chloride 2.0

less than 1%

Sodium dodecyl benzene sulfonate, PEG-20, sodium isethionate, titanium dioxide, pentasodium pentetate, tetrasodium etidronate.

- 55 **[0033]** The resulting mixtures require at least about 1.5 parts of fumed silica for 10 parts of petroleum jelly for bars with the lower levels of petroleum jelly (20%) while the higher levels of petroleum jelly (40%) require at least about 1 part of fumed silica to 4 parts of petroleum jelly to increase hardness of the syndet/soap bars to values less than 50mm x 10. It will be pointed out that the hardness of the syndet/soap mass processed without fumed silica and without petroleum jelly is 15mm x 10. This value is approached by all blends of petroleum jelly, silica and syndet/soap, once the ratios of fumed silica to petroleum jelly has a value of 0.5 or higher.

EXAMPLES 45-56

[0034] Examples 45-56 present the hardness of the compacted mass that is produced when fumed silica, petroleum jelly and a commercial blend of syndet are mixed and properly processed. Comparative examples L, M and N have been included to show the consistency of the commercial syndet base with petroleum and no fumed silica.

Table VI

Example No.	L	45	46	47	48
Petroleum Jelly USP	20.0	20.0	20.0	20.0	20.0
Fumed Silica	0.0	4.0	5.0	6.67	10.0
Syndet Base****	80.0	76.0	75.0	73.33	70.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	125.0	50.0	40.0	27.0	15.0
Example No.	M	49	50	51	52
Petroleum Jelly USP	30.0	30.0	30.0	30.0	30.0
Fumed Silica	0.0	6.0	7.5	10.0	15.0
Syndet Base****	70.0	64.0	62.5	60.0	55.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	210.0	40.0	25.0	18.0	15.0
Example No.	N	53	54	55	56
Petroleum Jelly USP	40.0	40.0	40.0	40.0	40.0
Fumed Silica	0.0	8.0	10.0	13.3	20.0
Syndet Base****	60.0	52.0	50.0	46.7	40.0
R=Si/PJ	0.0	0.2	0.25	0.33	0.5
Penetration Value (mmx10)	250.0	80.0	55.0	30.0	15.0

****Commercial syndet base

Sodium cocoylisethionate	50%
Stearic acid	33%
Water	10%
Sodium isethionate	5%
Titanium dioxide	1.0
Sodium chloride	1.0

[0035] The consistency of the paste or solid is tested as previously described. The resulting mixtures require at least about 1 part of fumed silica for 5 parts of petroleum jelly for bars with the lower levels of petroleum jelly (20%) while the higher levels of petroleum jelly (40%) require at least about 1 part of fumed silica to 3.5 parts of petroleum jelly to increase hardness of the syndet bars to values of 50mm x 10. It will be pointed out that the hardness of the syndet mass processed without fumed silica and petroleum jelly is 15mm x 10. This value is approached by all blends of petroleum jelly, silica and syndet, once the ratio of fumed silica to petroleum jelly has a value of 0.5 or higher (that is 1 part of fumed silica to 2 parts of petroleum jelly).

[0036] The following are additional specific, non-limiting examples of compositions in accordance with the present invention.

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EXAMPLE 57

[0037]

5

10

	%	250g
Petroleum Jelly	40.00	100.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	52.00	130.00

15

Comments: Penetration = 50; Si/PJ=0.2; foams well. The sodium cocoyl isethionate used in this and other Examples is available under the designation Tauranol I-78 from Finetex, Inc., Elmwood Park, New Jersey.

EXAMPLE 58

[0038]

20

25

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	10.50	26.25
Sodium cocoyl isethionate	49.50	123.75

30

Comments: Penetration = 40; Si/PJ=0.26; foams well.

EXAMPLE 59

[0039]

35

40

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	13.00	32.50
Sodium cocoyl isethionate	47.00	117.50

45

Comments: Penetration = 35; Si/PJ=0.325; foams well.

EXAMPLE 60

[0040]

50

55

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	6.00	15.00
Sodium cocoyl isethionate	64.00	160.00

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Comments: Penetration = 35; Si/PJ=0.2; foams well.

EXAMPLE 61

5 **[0041]**

10

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	8.00	20.00
Sodium cocoyl isethionate	62.00	155.00

15

Comments: Penetration = 30; Si/PJ=0.267; foams well.

EXAMPLE 62

20 **[0042]**

25

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	10.00	25.00
Sodium cocoyl isethionate	60.00	150.00

30

Comments: Penetration = 23; Si/PJ=0.33; foams well.

EXAMPLE 63

35 **[0043]**

40

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	4.00	10.00
Sodium cocoyl isethionate	76.00	190.00

45

Comments: Penetration = 25; Si/PJ=0.2; good foam.

EXAMPLE 64

50 **[0044]**

55

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	5.50	13.75

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(continued)

	%	250g
Sodium cocoyl isethionate	74.50	186.25

Comments: Penetration = 17; Si/PJ=0.275; foams well.

EXAMPLE 65**[0045]**

	%	250g
Petroleum Jelly	20.00	50.00
Fumed silica	6.50	16.25
Sodium cocoyl isethionate	73.50	183.75

Comments: Penetration = 15; Si/PJ=0.325; foams well.

EXAMPLE 66**[0046]**

	%	250g
Glycerine	20.00	50.00
Fumed Silica	4.00	10.00
Sodium cocoyl isethionate	76.00	190.00

Comments: Penetration = 22.5; Si/Glyc=0.2; good foam.

EXAMPLE 67**[0047]**

	%	250g
Glycerine	20.00	50.00
Fumed Silica	5.50	13.75
Sodium cocoyl isethionate	74.50	186.25

Comments: Penetration = 8.0; Si/Glyc=0.275; foams well.

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EXAMPLE 68

[0048]

5

10

	%	250g
Glycerine	20.00	50.00
Fumed silica	6.50	16.25
Sodium cocoyl isethionate	73.50	183.75

Comments: Penetration = 5; Si/Glyc=0.325; foams well.

15

EXAMPLE 69

[0049]

20

25

	%	250g
Glycerine	30.00	75.00
Fumed Silica	6.00	15.00
Sodium cocoyl isethionate	64.00	160.00

Comments: Penetration = 48 ; Si/Glyc=0.2; foams well.

30

EXAMPLE 70

[0050]

35

40

	%	250g
Glycerine	30.00	75.00
Fumed Silica	8.00	20.00
Sodium cocoyl isethionate	62.00	155.00

Comments: Penetration = 30; Si/G=0.267; foams well.

45

EXAMPLE 71

[0051]

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	%	250g
Glycerine	30.00	75.00
Fumed Silica	10.00	25.00
Sodium cocoyl isethionate	60.00	150.00

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Comments: Penetration = 16; Si/G=0.33; foams well.

EXAMPLE 72

5 [0052]

10

	%	250g
Glycerine	40.00	100.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	52.00	130.00

15

Comments: Penetration = 38; Si/Glyc.=0.2; foams well. The sodium cocoyl isethionate used in this and other Examples is available under the designation Tauranol I-78 from Finetex, Inc., Elmwood Park, New Jersey.

EXAMPLE 73

20

[0053]

25

	%	250g
Glycerine	40.00	100.00
Fumed Silica	10.50	26.25
Sodium cocoyl isethionate	49.50	123.75

30

Comments: Penetration = 34; Si/Glyc.=0.26; foams well.

EXAMPLE 74

35

[0054]

40

	%	250g
Glycerine	40.00	100.00
Fumed Silica	13.00	32.50
Sodium cocoyl isethionate	47.00	117.50

45

Comments: Penetration = 8.0; Si/Glyc.=0.325; foams well.

EXAMPLE 75

50

[0055]

55

	%	250g
Glyc.	40.00	100.00

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(continued)

	%	250g
Fumed Silica	8.00	20.00
Disodium Lauryl Sulfosuccinate	52.00	130.00

Comments: Penetration = 45; Si/PJ=0.2; foams well. The disodium lauryl sulfosuccinate used in this and other Examples is available under the designation Monamate LA-100 from Mona Industries, Patterson, N.J.

EXAMPLE 76

[0056]

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	10.50	26.25
Disodium Lauryl Sulfosuccinate	49.50	123.75

Comments: Penetration = 35; Si/PJ=0.26; foams well.

EXAMPLE 77

[0057]

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	13.00	32.50
Disodium Lauryl Sulfosuccinate	47.00	117.50

Comments: Penetration = 25; Si/PJ=0.325; foams well.

EXAMPLE 78

[0058]

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	6.00	15.00
Disodium Lauryl Sulfosuccinate	64.00	160.00

Comments: Penetration = 30; Si/PJ=0.2; foams well.

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EXAMPLE 79

[0059]

5

10

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	8.00	20.00
Disodium Lauryl Sulfosuccinate	62.00	155.00

Comments: Penetration = 22; Si/PJ=0.27; foams well.

15

EXAMPLE 80

[0060]

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25

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	10.00	25.00
Disodium Lauryl Sulfosuccinate	60.00	150.00

Comments: Penetration = 15; Si/PJ=0.33; foams well.

30

EXAMPLE 81

[0061]

35

40

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	4.00	10.00
Disodium Lauryl Sulfosuccinate	76.00	190.00

Comments: Penetration = 20; Si/PJ=0.2; foams well.

45

EXAMPLE 82

[0062]

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55

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	6.50	16.25
Disodium Lauryl Sulfosuccinate	73.50	183.75

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Comments: Penetration = 14; Si/PJ=0.325; foams well.

EXAMPLE 83

5 **[0063]**

10

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	5.50	13.75
Disodium Lauryl Sulfosuccinate	74.50	186.25

15

Comments: Penetration =18; Si/PJ=0.275; foams well.

EXAMPLE 84

20 **[0064]**

25

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	8.00	20.00
Sodium cocoyl isethionate	31.00	77.50
Disodium Lauryl Sulfosuccinate LA-100	31.00	77.50

30

Comments: Penetration =35; Si/PJ=0.27; foaming characteristics good.

35 **EXAMPLE 85**

[0065]

40

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	8.00	20.00
Sodium cocoyl isethionate	26.00	65.00
Disodium Lauryl Sulfosuccinate	26.00	65.00

45

50

Comments: Penetration = 52; Si/PJ=0.2; very good foaming characteristics.

55

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EXAMPLE 86

[0066]

5

10

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	8.00	20.00
Sodium cocoyl isethionate	27.25	68.10
Disodium Lauryl Sulfosuccinate	24.75	61.90

15

Comments: Penetration = 42; Si/PJ=0.2625; very good foaming characteristics.

EXAMPLE 87

20 [0067]

25

30

	%	250g
Petroleum Jelly	40.00	100.00
Fumed Silica	13.00	32.50
Sodium cocoyl isethionate	23.50	58.75
Disodium Lauryl Sulfosuccinate	23.50	58.75

Comments: Penetration = 30; Si/PJ=0.325; very good foaming characteristics.

35 EXAMPLE 88

[0068]

40

45

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	6.00	15.00
Sodium cocoyl isethionate	32.00	80.00
Disodium Lauryl Sulfosuccinate	32.00	80.00

50

Comments: Penetration = 42; Si/PJ=0.2; very good foaming characteristics.

55

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EXAMPLE 89

[0069]

	%	250g
Petroleum Jelly	30.00	75.00
Fumed Silica	10.00	25.00
Sodium cocoyl isethionate	30.00	75.00
Disodium Lauryl Sulfosuccinate	30.00	75.00

Comments: Penetration = 27; Si/PJ=0.33; very good foaming characteristics.

EXAMPLE 90

[0070]

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	4.00	10.00
Sodium cocoyl isethionate	38.00	95.00
Disodium Lauryl Sulfosuccinate	38.00	95.00

Comments: Penetration = 26; Si/PJ=0.2; very good foaming characteristics.

EXAMPLE 91

[0071]

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	5.50	13.75
Sodium cocoyl isethionate	37.50	93.75
Disodium Lauryl Sulfosuccinate	37.00	92.50

Comments: Penetration = 20; Si/PJ=0.275; very good foaming characteristics.

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EXAMPLE 92

[0072]

5

10

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	6.50	13.25
Sodium cocoyl isethionate	37.00	92.50
Disodium Lauryl Sulfosuccinate	36.50	91.50

15

Comments: Penetration = 17; Si/PJ=0.375; very good foaming characteristics.

EXAMPLE 93

20 [0073]

25

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	4.00	10.00
Sodium C ₁₄₋₁₆ Olefin Sulfonate	76.00	190.00

30

Comments: Penetration = 34; Si/PJ=0.2; foams well. The Sodium C₁₄₋₁₆ Olefin Sulfonate used in this and other examples is available under the designation Bioterge AS-90 from Stepan Company, Northfield, IL 60093.

EXAMPLE 94

35

[0074]

40

	%	250g
Petroleum Jelly	20.00	50.00
Fumed Silica	5.50	13.75
Sodium C ₁₄₋₁₆ Olefin Sulfonate	74.50	186.25

45

Comments: Penetration = 25; Si/PJ=0.275; foams well.

EXAMPLE 95

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[0075]

55

	%	250g
Petroleum Jelly	20.00	50.00

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(continued)

	%	250g
Fumed Silica	6.50	16.25
Sodium C ₁₄₋₁₆ Olefin Sulfonate	73.50	183.75

Comments: Penetration =21; Si/PJ=0.325; good foam.

EXAMPLE 96

[0076]

	%	250g
Petroleum Jelly	30.00	75.00
Fumed silica	6.00	15.00
Sodium C ₁₄₋₁₆ Olefin Sulfonate	64.00	160.00

Comments: Penetration = 47; Si/PJ=0.2; good foam.

EXAMPLE 97

[0077]

	%	250g
Petroleum Jelly	30.00	75.00
Fumed silica	8.00	20.00
Sodium C ₁₄₋₁₆ Olefin Sulfonate	62.00	155.00

Comments: Penetration = 25; Si/PJ=0.267; good foam.

EXAMPLE 98

[0078]

	%	250g
Petroleum Jelly	30.00	75.00
Fumed silica	10.00	25.00
Sodium C ₁₄₋₁₆ Olefin Sulfonate	60.00	150.00

Comments: Penetration = 22; Si/PJ=0.33; good foam.

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EXAMPLE 99

[0079]

5

10

	%	250g
Petroleum Jelly	40.00	100.00
Fumed silica	8.00	20.00
Sodium C ₁₄₋₁₆ Olefin Sulfonate	52.00	130.00

Comments: Penetration= 48; Si/PJ=0.2; good foam.

15

EXAMPLE 100

[0080]

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25

	%	250g
Petroleum Jelly	40.00	100.00
Fumed silica	10.50	26.25
Sodium C ₁₄₋₁₆ Olefin Sulfonate	49.50	123.75

Comments: Penetration = 32; Si/PJ=0.2625; good foam.

30

EXAMPLE 101

[0081]

35

40

	%	250g
Petroleum Jelly	40.00	100.00
Fumed silica	13.00	32.50
Sodium C ₁₄₋₁₆ Olefin Sulfonate	47.00	117.50

Comments: Penetration =25; Si/PJ=0.325; good foam.

45

EXAMPLE 102

[0082]

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55

	%	500g
Petroleum Jelly	30.00	150.00
Fumed silica	8.00	40.00
Sodium cocoyl isethionate	15.00	75.00

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(continued)

	%	500g
Disodium Lauryl Sulfosuccinate	15.00	75.00
Potassium Polymetaphosphate	.40	2.00
Corn Starch	15.80	79.00
Soap base	15.80	79.00

Comments: Penetration = 25; Si/PJ=0.267; good foam. See Table II for Composition of soap base.

EXAMPLE 103**[0083]**

	%	500g
Petroleum Jelly	30.00	150.00
Fumed silica	8.00	40.00
Sodium cocoyl isethionate	15.00	75.00
Disodium lauryl sulfosuccinate	15.00	75.00
Potassium polymetaphosphate	0.4	2.00
Soap base	31.60	158.00

Comments: Penetration = 42; Si/PJ=0.267; sticky, soft.

EXAMPLE 104**[0084]**

	%	500g
Petroleum Jelly	30.00	150.00
Fumed silica	8.00	40.00
Sodium cocoyl isethionate	15.00	75.00
Disodium lauryl sulfosuccinate	15.00	75.00
Potassium polymetaphosphate	.40	2.00
Syndet/Soap base	31.60	158.00

Comments: Penetration = 40; Si/PJ=0.267; too tacky, sticky. See Table III for formulation of syndet/soap base.

EXAMPLE 105

[0085]

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15

	%	250g
Petroleum Jelly	30.00	75.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	15.00	37.50
Disodium lauryl sulfosuccinate	15.00	37.50
Potassium polymetaphosphate	.40	1.00
Confectioners' sugar	15.80	39.50
Soap base	15.80	39.50

20

Comments: Penetration = 36; Si/PJ=0.267; See Table II for composition of soap base.

EXAMPLE 106

[0086]

25

30

35

	%	250g
Petroleum Jelly	30.00	75.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	15.00	37.50
Disodium lauryl sulfosuccinate	32.00	80.00
Soap base	15.00	37.50

40

EXAMPLE 107

[0087]

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50

	%	250g
Avocado Oil	30.00	75.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	62.00	155.00

55

Comments: Penetration = 24; Si/Oil=0.267; foams very well.

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EXAMPLE 108

[0088]

5

10

	%	250g
Sesame Oil	30.00	75.00
Fumed silica	8.00	20.00
Sodium cocoyl isethionate	62.00	155.00

15

Comments: Penetration = 24; Si/Oil=0.267; foams very well, but tacky.

EXAMPLE 109

[0089]

20

25

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INGREDIENTS	%	200 lbs
PHASE A		
Glycerine 96%	25.00	50.00
Fumed Silica	6.66	13.32
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	30.84	61.68
Fragrance	1.00	2.00
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	100.00	200.00

Comments: Penetration = 19; Si/Glyc. = 0.266

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EXAMPLE 110

[0090]

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15

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INGREDIENTS	%	200 lbs
PHASE A		
Glycerine 96%	25.00	50.00
Fin Solv - TN	10.00	20.00
Cab-o-Sil M-5	6.66	13.32
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide USP	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	21.84	43.68
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	100.0	200.0

Comments: Penetration = 15; Si/Oil + Glyc.=0.19; FIN-SOLV-TN is a C₁₂₋₁₅ Alkyl Benzoate available from Fine-tex, Inc., Elmwood Park, NJ. Polyethylene glycol 8000 available from Ruger Chemical Co., Inc., Hillside, N.J.

EXAMPLE 111

[0091]

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INGREDIENTS	%	200 grams
PHASE A		
Dipropylene glycol	25.00	50.00
Fumed Silica	6.66	13.32
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide USP	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	30.84	61.68
Fragrance	1.00	2.00
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	100	200

Comments: Si/Dipropylene glycol = 0.266
penetration = 4.0

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EXAMPLE 112

[0092]

5

10

15

20

25

Comments: Penetration = 12
Si/Dipropylene glycol = 0.266

INGREDIENTS	%	200 grams/lbs
PHASE A		
Propylene glycol	25.00	50.00
Fumed Silica	6.66	13.32
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide USP	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	30.84	61.68
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	99.0	198.0

EXAMPLE 113

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[0093]

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INGREDIENTS	%	200 g
PHASE A		
Butylene glycol	25.00	50.00
Cab-o-Sil M-5	6.66	13.32
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide USP	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	30.84	61.68
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	99.0	198.0

Comments: Penetration 46; Si/Butylene glycol = 0.266

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EXAMPLE 114

[0094]

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15

20

25

INGREDIENTS	%	200 g
PHASE A		
Sorbitol 70%	25.00	50.00
Fumed Silica	8.00	16.00
PHASE B		
Potassium Polymetaphosphate	0.50	1.00
Titanium dioxide USP	1.00	2.00
PHASE C		
Polyethylene glycol 8000 Powder	29.50	59.00
PHASE D		
Sodium Cocoyl Isethionate	35.00	70.00
	<u>99.0</u>	<u>198.0</u>

Comments: Penetration = 1; Si/Sorbitol (70%) = 0.32

EXAMPLE 115

30 [0095]

35

40

INGREDIENTS	%	200 grams
Water	20	40.00
Silica	6.5	13.00
Sodium Cocoyl Isethionate	73.50	147.00
		<u>200.00</u>

Penetration = 15; foams very well.

EXAMPLE 116

[0096]

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INGREDIENTS	%	200 grams
Water	30.00	60.00
Silica	10.00	20.0
Sodium Cocoyl Isethionate	<u>60.00</u>	120.00
	100.00	<u>200.00</u>

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Penetration = 8; foams very well.

EXAMPLE 117

5 [0097]

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INGREDIENTS	%	200 grams
Water	40.00	80.00
Silica	13.00	26.00
Sodium Cocoyl Isethionate	<u>47.00</u>	94.00
	100.00	<u>200.00</u>

P = 14,
foams very well

20

EXAMPLE 118

[0098]

25

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INGREDIENTS	%	200 grams
Avocado Oil	10.00	20.00
Silica	3.00	6.00
Soap Base	<u>87.00</u>	174.00
	100.00	<u>200.00</u>

35

p = 21 Si/Avocado oil = 0.3

EXAMPLE 119

40 [0099]

45

50

INGREDIENTS	%	200 grams
Petroleum Jelly	25	50.00
Silica	8.5	17.00
Sodium Cocoyl Isethionate	35.0	70.00
Oatmeal	<u>31.5</u>	<u>63.0</u>
	100.00	200.00

p=33 Si/PJ=0.34

55

EXAMPLE 120

[0100]

INGREDIENTS	%	2000 g
Petrolatum	20.00	400.0
Fumed Silica	3.20	64
Corn Syrup Solids	23.5	470
Polyethylene glycol 8000	20.00	400
Sodium Cocoyl Isethionate	30.00	600.0
Water	2.0	40.0
Potassiumpolymeta phosphate	0.3	6.0
Titanium Dioxide	1.0	20.0
	100.0	2000.00

Comments: Si/PJ = 0.16 ; penetration = 30

[0101] While the above description contains many specific details of compositions and has in accordance with this invention, these specific details should not be construed as limitations on the scope of the invention, but merely as exemplifications of preferred embodiments thereof. Those skilled in the art will envision many other possible variations that all within the scope and spirit of the invention as defined by the claims appended hereto.

Claims**1.** A cleansing bar composition comprising

a liquid phase containing one or more members selected from the group consisting of oils, oil and wax mixtures and polyols;

particulate silica having a surface area of at least 75 m²/gm; and

a cleansing agent selected from the group consisting of soaps, synthetic detergents and combinations thereof, the ratio of the liquid phase to the particulate silica on a weight to weight basis being between about 2:1 to about 10:1.

2. A cleansing bar composition comprising:

a liquid phase containing one or more members selected from the group consisting of oils, oil and wax mixtures and polyols, the mixture containing no added water;

a cleansing agent selected from the group consisting of soaps, synthetic detergents and combinations thereof; and

particulate silica in an amount sufficient to provide a penetration value for the composition of up to about 50.

3. A cleansing bar composition as in claims 1 or 2 wherein the particulate silica comprises fumed silica.**4.** A cleansing bar composition as in claims 1 or 2 wherein the liquid phase contains a polyol.**5.** A cleansing bar composition as in claim 4 wherein the liquid phase contains a compound selected from the group consisting of glycerine, propylene glycol, polypropylene glycol, ethylene glycol, butylene glycol, polybutylene glycol, and sorbitol.**6.** A cleansing bar composition as in claims 1 or 2 wherein the liquid phase is present in an amount from about 15 to about 45 weight percent based on the entire composition.

7. A cleansing bar composition as in claims 1 or 2 wherein the cleansing agent is selected from the group consisting of sodium acyl isethionates, sodium alpha olefin sulfonates and disodium alkyl sulfosuccinates.
- 5 8. A cleansing bar composition as in claims 1 or 2 wherein the cleansing agent is present in an amount from about 25 to about 85 weight percent based on the entire composition.
9. A composition as in claims 1 or 2 further comprising an effective amount of an active ingredient.
- 10 10. A composition as in claim 9 wherein said active ingredient is selected from the group consisting of coal tar, benzoyl peroxide, vitamin A, vitamin E, triclosan, PVP-Iodine, salicylic acid and sunscreens.
11. A composition as in claims 1 or 2 further comprising a foam - booster.
- 15 12. A composition as in claim 11 wherein said foam booster is selected from the group consisting of potassium polymetaphosphate, sodium lauryl sulfate, sodium lauryl sulfoacetate, sodium lauryl sarcosinate, acyl glutamate and amides.
13. A composition as in claim 2 wherein the particulate silica has a surface area of at least 75 m²/gm.
- 20 14. A method of preparing a cleansing bar comprising:

adding particulate silica having a surface area of at least 75 m²/gm to a liquid phase containing one or more members selected from the group consisting of oils, oil and wax mixtures and polyols to provide a mixture, the mixture containing no added water;
25 combining the mixture with a cleansing agent selected from the group consisting of soaps, synthetic detergents and combinations thereof to provide a cleansing composition having a penetration value of about 50 or less;
and
forming the cleansing composition into a bar.
- 30 15. A method as in claim 14 wherein the particulate silica is added to the liquid phase at a weight ratio of about 1:2 to about 1:10.
16. A method as in claim 14 wherein fumed silica is added to glycerine to form a mixture.
- 35 17. A method as in claim 14 wherein the cleansing agent combined with the mixture comprises a synthetic detergent selected from the group consisting of sodium acyl isethionates, sodium alpha olefin sulfonates and disodium alkyl sulfosuccinates.
- 40 18. An article of manufacture comprising:

a cleansing bar containing less than about 10% by weight of added water formed from a composition including a liquid phase containing one or more polyols,
particulate silica having a surface area of at least 75 m²/gm; and
a cleansing agent,
45 the ratio of the liquid phase to the particulate silica on a weight to weight basis being between about 2:1 to about 10:1.
19. A cleansing bar comprising:

50 a composition including liquid phase containing one or more polyols,
a cleansing agent selected from the group consisting of soaps, synthetic detergents and combinations thereof;
and
particulate silica, the particulate silica being present in an amount sufficient to provide the bar with a penetration value of up to about 50, the bar containing less than about 10% by weight of added water.
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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 12 0910

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X A	EP 0 194 126 A (PROCTER & GAMBLE) 10 September 1986 * page 7, paragraph 1 * * page 9, paragraph 4; claim 1; examples III, VI *	1,4-6,8,9 2,13-15,18,19	C11D17/00 C11D3/12 C11D9/18 C11D9/24 C11D3/20 C11D10/04 C11D13/10
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