PALM BASED EXFOLIATOR

FILED OF INVENTION

The present invention relates to a palm based exfoliator and a method of producing thereof. More particularly, the palm based exfoliator comprising a mixture of palm oil, palm derivatives and palm waves, emulsifiers and additives.

BACKGROUND OF THE INVENTION

Our skin can shed 30,000 to 40,000 dead cells per minute and produce new cells every 28 days naturally. These dead cells if not removed will clog pores of the epidermis which is the top layer of the skin. Dirt and dust settle and adhere to the skin can adversely affect the temperature regulating properties of the skin. Hence, proper hygiene allows the skin to function optimally. Ideally, washing and exfoliating the epidermal layer on a regular basis is required to reduce acne, and promote the radiant and smooth skin.

Cleaning using soap merely washes the outer layer of skin to remove dirt, debris, and other small particles from the skin. Soap is not able to remove old dead skin cells which clog pores, produce acne, and trap dirt. Exfoliating once or twice a week helps shedding these unwanted dead cells from the skin and produces a healthy growing environment for newly produced skin cells. Exfoliating also stimulates circulation and leaves skin appeared smoother, finer and clearer.

Nowadays, there are chemical and mechanical exfoliations available. Chemical exfoliation removes dead cells by utilizing acidic properties of various compounds to weaken the cohesive properties of the skin cells. Whereas mechanical exfoliation

utilizes physical agitation to scrub dead skins off the top epidermal layer manually.

Exfoliators used for the above-mentioned exfoliation included everything from washcloths, buffing sponges, facial brushes and loofahs to cleansing grains, sloughing cleansers and scrubs to alpha hydroxyl acid (AHA), benzoyl peroxide and salicylic acid formulas that exfoliate chemically. A newer form of exfoliation, microdermabrasion, and micro-fine corundum crystals suspended in a hydrating, moisturizing base is required to polish the skin's surface.

There are limited available exfoliator and preparation options for an exfoliator. One of the disadvantages of the currently available exfoliator is that some ingredients in mechanical exfoliates are not biodegradable. This is attributed by microbeads' particle used in mechanical exfoliation which are too small (less than 1mm) to be caught by sewage works. Consequently, tonnes of microbeads being released into the environment which damages marine ecosystems. Marine life is not being able to digest these microbeads' particles within their digestive tract. This will lead to an unhealthy development of their body and eventually to death. Other drawbacks are the high price of some of the products and methods used to achieve it. Exfoliation will also lead to some initial redness to the skin. Near the end of chemical peels, the skin will frost, with colors varying from a bright white to grey on the skin surface. These side effects are very common for chemical means exfoliation.

In view of the drawbacks, alternative mixture composition for exfoliator preparation is proposed. There are few patented technologies over the prior art relating to exfoliator prepared from different ingredients and a method of preparation thereof. However, there is a wide variation in the type of exfoliator and qualities as well as the methods of producing thereof for exfoliating indications.

There is a publication relating to exfoliating scented soap and preparation method

thereof. The exfoliating scented soap is prepared from the components in parts by weight: 250-300 parts of rice bran oil, 90-100 parts of golden jojoba oil, 80-100 parts of coconut oil, 80-90 parts of palm oil, 50-60 parts of shea butter oil, 60-80 parts of sodium hydroxide, 200-250 parts of pineapple juice, 0.5-2 parts of tea tree essential oil, 0.5-2 parts of eucalyptus essential oil, 20-30 parts of honey and 20-30 parts of glycerinum is disclosed in China Patent Application Publication No. CN103897897 (A). United States Patent Application Publication No. US20150202124 A1 disclosed an exfoliating body soap comprising a cleansing surfactant base, a first quantity of exfoliating agent, and a second quantity of exfoliating agent to clean and remove oils and particulates from the user's skin. However, the above-mentioned prior arts do not use palm oil materials as exfoliating agent.

The invention provides an alternative exfoliator which is prepared using renewable and environmentally friendly ingredients of palm oil derivatives for use in manufacturing especially cosmetic, pharmaceutical, hygiene and skin care products.

SUMMARY OF THE INVENTION

One objective of the present invention is to provide an alternative exfoliator comprising palm-based mixture to remove dry, dead skin cells that clog pores of the epidermis and clean the skin surface.

A further objective of the invention is to provide an exfoliator which is suitable for the use in the manufacture of a dermatological, cosmetic, hygiene products. This is because the present invention exfoliator is able to remove foreign stuff and clean the body surface. The exfoliator also contains natural active compounds such as tocopherol, tocotrienol, carotenoids and sterol that are beneficial to the skin and body as compared to the commercial exfoliate.

Another objective of the present invention is to provide an alternative exfoliator produced from the high amount of palm-oil based materials which are renewable and environmentally friendly.

At least one of the preceding objects is met, in whole or in part, by the present invention, in which the embodiment of the present invention describes an exfoliator comprising a 60-99.6wt% palm based mixture, 0.1-10wt% emulsifiers, 0.1-15wt% additives, 0.1-10wt% antimicrobial and 0.1-5wt% modifier.

Ideally, 92wt% palm oil mixture, 3wt% emulsifier, and 5wt% additives are used for optimal exfoliating effect.

Preferably, the emulsifier is a non-ionic surfactant, a cationic surfactant, an anionic surfactant, a polymeric surfactant, a polyvalent polymer, natural emulsifiers such as monoglycerides. More preferably, the non-ionic is used as the emulsifier to produce stable exfoliator.

Preferably, the additive is active ingredients, antimicrobials, whitening agents, or any combination thereof. More preferably, natural palm based active ingredients used as the additive to regulate and nourish the skin health. More preferably, the active ingredient is selected from tocopherol, tocotrienol, carotenoids, sterol, or any combination thereof. These palm based active ingredients are able to enrich and nourish skin health. Tocols such as tocopherol and tocotrienol act as anti-oxidant, whereas carotenoids act as pro-vitamin and phytosterols act as skin protector.

Preferably, the antimicrobial additive is sodium azide, natural antimicrobial preservative such as monoglycerides, ethylhexylglycerin, glycols, phenethyl alcohol, ethylenediaminetetraacetic acid (EDTA), sodium salts of glutamate diacetate,

iminodisuccinate, and ethylenediamine disuccinate, an organic acid such as citric acid, sorbic acid, benzoic acid, caprylic acid and lauric acid or any combination thereof. Natural palm based derivatives such as monoglycerides, caprylic acid and lauric acid is preferred use as the antimicrobial. The above-mentioned antimicrobials are natural, green, biodegradable and having a broad spectrum of antibacterial properties.

In a preferred embodiment, the present invention also relates to a method of producing an exfoliator from the palm oil mixture comprising the steps of mixing, melting and stirring continuously the palm mixtures, adding the emulsifier to the mixture and stirring until homogenous solution formed, adding the water containing emulsifiers to the solution and cooling the solution containing emulsifier to room temperature to obtain slurry containing exfoliators.

Further, the stirring step is carried on continuously basic at 70-90^{0}C for whole preparation process and ceased when the reach the room temperature. The objective of this step is to ensure all solid matrixes melted and enable control the formation of exfoliator size and shape.

One skilled in the art will readily appreciate that the present invention is well adapted to carry out the objects and obtain the ends and advantages mentioned, as well as those inherent therein. The embodiments described herein are not intended as limitations on the scope of the invention.

DETAILED DESCRIPTION OF THE INVENTION

It is to be understood that the present invention may be embodied in other specific forms and is not limited to the sole embodiment described herein. However, modification and equivalents of the disclosed concepts such as those which readily

occur to one skilled in the art are intended to be included within the scope of the claims which are appended thereto.

An exfoliator is a mechanical or chemical agents such as an abrasive skin wash or salicylic acid that is applied to the skin to remove dead cells from the surface. Toxins are released from the body through the pores while minerals are received through the pores to enhance the relaxing effect. Exfoliating offers a refreshing feeling, cleansing toxins, and removing particulates from the body of the user. Encourages proper skin hygiene in a safe, convenient, and simple manner

One aspect of the present invention is to provide an alternative exfoliator produced from a high amount of palm based materials which is renewable and environmentally friendly. Palm materials are renewable resources which can be readily obtained and replenished naturally. This will reduce environmental impacts of the use of fossil resources and avoid negative impacts on climate, air, water and soils.

One of the embodiments of the present invention is directed to an exfoliator comprising a palm based mixture in an amount of 60-99.6wt%, an emulsifier in an amount of 0.1-10wt%, an additive in an amount of 0.1-15wt%, antimicrobial in an amount of 0.1-10wt% and a modifier in an amount of 0.1-5wt%.

Ideally, 92wt% palm oil mixture, 3wt% emulsifier, and 5wt% additives are used for optimal for exfoliation effect.

In the preferable embodiment of the present invention, an exfoliator for the use in, for example, skin care and cosmetic products manufacturing comprising a palm oil-based mixture in an amount of 0.1-99.4wt% palm stearin which is palm oil or palm kernel oil, 0.1-4.5wt% palm olein which is palm oil or palm kernel oil, 0.1-4.5wt% refine, bleached and deodorized (RBD) palm oil fractions which is stearin or olein, 0.1-

10wt% palm mid fraction, 0.1-10wt% coco butter substitute, 0.1-65.4wt% palm stearic acid, 0.1-5.5wt% fatty acid which is fractions from palm oil, monoglycerides and diglycerides.

The present invention aims to provide an alternative exfoliator comprising palm-based mixture to remove dry, dead skin cells that clog pores of the epidermis and clean the body surface. Most of the commercial exfoliators used widely in the market are made from unrenewable resources and not biodegradable, as compared to the palm based exfoliators which are produced from renewable and green materials. It is also biodegradable. At the same time, the palm based exfoliators contain existing natural active ingredients such as tocotrienol and carotenoids which is not present in the commercial exfoliators. As such the palm based exfoliators also has the ability to nourish the skin after removal of dead cell presence on the epidermis.

As described in the preceding embodiment, emulsifiers used in this invention can be either from a single or a mixture of emulsifiers. Emulsifiers contain molecules having both hydrophilic and hydrophobic portions such as nonionic surfactants, cationic surfactants, anionic surfactants, polymeric surfactants, polyvalent polymers. Examples of nonionic surfactant are monoglycerides, Polysorbate 20, poloxomer surfactants. An emulsifier is used in small quantity to help in forming or stabilizing the immiscible liquids in an emulsion. An emulsifier consists of a water-loving hydrophilic head and an oil-loving hydrophobic tail. The hydrophilic head is directed to the aqueous phase and the hydrophobic tail to the oil phase. The emulsifier positions itself at the oil/water or air/water interface and, by reducing the surface tension exhibited the stabilizing effect on the emulsion. Preferably, non-ionic surfactant, polysorbte is chosen for the exfoliator preparation this is because it provides stable and more uniform exfoliator size and shape. Emulsifiers used can be either dissolved or dispersed in aqueous or non-aqueous. Total amount of emulsifiers used in the process is between 0.1 to 5wt%. 3wt% of surfactant is ideally for the

present invention because this concentration provides better flow in the process of producing the exfoliators.

Preferably, the antimicrobial additive is sodium azide, natural antimicrobial preservative such as monoglycerides, ethylhexylglycerin, glycols, phenethyl alcohol, ethylenediaminetetraacetic acid (EDTA), sodium salts of glutamate diacetate, iminodisuccinate, and ethylenediamine disuccinate, organic acid such as citric acid, sorbic acid, benzoic acid, caprylic acid and lauric acid or any combination thereof. Natural palm based derivatives such as monoglycerides, caprylic acid and lauric acid is preferred to be used as the antimicrobial additive. The above-mentioned antimicrobial additives are natural, green, biodegradable and having broad spectrum of antibacterial properties.

In another preferable embodiment of the present invention, the additive is active ingredients, antimicrobials, whitening agents, or any combination thereof. More preferably, tocopherol, tocotrienol, carotenoids, or sterol is used as the additive. More preferably, the active ingredient is selected from tocopherol, carotenoids, sterol, or any combination thereof.

Preferably, the antimicrobial additive is sodium azide, natural antimicrobial preservatives, or any combination thereof. More preferably, monoglycerides, caprylic acid, and lauric acid is used as the antimicrobial for optimal antimicrobial property and environmental friendly value.

Further, the present invention provides a method of preparing an alternative exfoliator from the palm oil mixture comprising the steps of mixing, melting and stirring continuously the palm mixtures, adding the emulsifier to the mixture and stirring until homogenous solution formed, adding the water containing emulsifiers to the solution and cooling the solution containing emulsifier to room temperature to obtain slurry

containing exfoliators.

As described by the preferred embodiment of the invention, the stirring step is carried continuously at 70-90^{0}C for whole preparation process and ceased when the reaches the room temperature. The objective of this step is to ensure all solid matrixes melted and enable control the formation of exfoliator size and shape. Essentially, the stirring enables the mixture to achieve homogeneity. The slurry containing exfoliators is formed slowly while the temperature of the mixture decreasing gradually. The slurry containing exfoliators can be directly incorporated into personal care formulations as exfoliate agents. Alternatively, the slurry containing exfoliators also can be sieved and dried to be used as exfoliating agents.

The present disclosure includes as contained in the appended claims, as well as that of the foregoing description. Although this invention has been described in its preferred form with a degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangements of parts may be resorted to without departing from the scope of invention.

Claims

1. A palm based exfoliator comprising:
65-99.6wt% mixture containing palm stearin, palm olein, refine, bleached and deodorized (RBD) palm oil, coco butter, palm stearic acid, palm based fatty acid, glyceride, or a combination thereof;
0.1–10wt% surfactant;
0.1–15wt% active agent selected from tocopherol, carotenoids, sterol, or any combination thereof;
0.1–10wt% antimicrobial selected from sodium azide, natural antimicrobial preservatives or any combination thereof; and
0.1 – 5wt% modifiers.

2. An exfoliator according to claim 1, wherein the surfactant is sorbitan monoester, polyoxyethylenesorbitan monoester, Poly(ethylene glycol) sorbitol ester, polyoxyethylene (20) fatty ether, poly(ethylene glycol)-block-poly(propylene glycol)-block-poly(ethylene glycol), sugar esters, natural emulsifiers such as monoglycerides or any combination thereof.

3. An exfoliator according to claim 1, wherein the tocopherol is a mixture of α-tocopherol, β-tocopherol, γ-tocopherol, and δ-tocopherol.

4. A method of producing an exfoliator according to claim 1 to 4 comprising the steps of:
melting and stirring continuously the mixture;
adding the emulsifier to the mixture and stirring until a homogenous solution formed;
adding the water containing emulsifiers to the solution; and
cooling the emulsion containing emulsifier to room temperature to obtain slurry exfoliate.

6. A method according to claim 4, wherein the stirring step is carried continuously at 70-90^{0}C and ceased when reaches the room temperature.

7. A method according to claim 4, further comprising a step of subjecting the solution containing emulsifiers to ultrasonic in power range of 20 – 400kHz.

8. A method according to claim 4, wherein the homogenisation rate is in the range of 100 – 9000rpm.

9. An exfoliator as claims in any of the proceeding claim having the size's range of 0.1 – 200 microns.