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60. Applications of Lanolin

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Introduction. Lanolin also called wool wax or wool grease is a yellow waxy substance secreted by the sebaceous glands of wool-bearing animals. Most lanolin used by humans comes from domestic sheep breeds that are raised specifically for their wool. Lanolin and its many derivatives are extracted from wool scouring liquor and converted to a value-added product that are generally used extensively in both the personal care (e.g. in high value cosmetics, facial cosmetics, lip products, etc.) and health care sectors. It is frequently used in protective baby skin treatment and as a treatment for sore nipples in breastfeeding mothers. Lanolin is used commercially in many industrial products ranging from rust-proof coatings to lubricants.

Materials and research. Wool wax is a natural substance, designed by nature to soften both skin and wool fibres, and to protect them against adverse weather conditions. The best-known uses of refined wool wax products (lanolin and lanolin derivatives) are in medicine, cosmetics and toiletries, which take advantage of these natural protective qualities. Lanolin is a key ingredient in some of the world's most popular cosmetics and pharmaceuticals. Without it, they would not have the emollient qualities that protect and care for our skin and hair. The composition of lanolin resembles the intercellular lipids of the stratum corneum. This is the outermost layer of the skin, which consists of cholesterol, cholesterol derivatives and free fatty acids. These lipids play a crucial role in the skin's moisture control. Under normal conditions, water continuously evaporates from the skin's surface. Insufficient rehydration from lower epidermal layers leads to a dry, inflexible and brittle stratum corneum. Anhydrous lanolin can absorb more than 200% of its weight in water (WW) to form stable water-in oil (w/o) emulsions. It's also capable of redistributing this moisture to environments of low relative humidity.

Lanolin is also widely used in: 1) as a personal care: foundation creams and other skin-cream products; oil-based skin lotions and cleansing oils as a skin moisturiser and to control viscosity; toilet soaps as a super fatting agent, minimising the dehydrating effect of detergents, and to retain perfume; nail polish removers to prevent the defatting of the surrounding skin; lipsticks and eye make-up as a film modifier and crystal inhibitor, for more uniformly dispersed pigment; hair dressings and shampoos; 2) medical applications: ointment bases, burns dressings and wound sprays; pigmented medications (e.g. zinc oxide), as a dispersing agent; surgical adhesive tapes, as an impregnating agent, plasticiser and skin-suited stack enhancer; chewing gum bases as a food additive (physiologically compatible emollient); pre-blended combinations for specific purposes, such as absorption bases; 3) industrial application (anti-corrosive effect on ferrous metals; leather and textiles; lubricant applications).

Conclusions. Lanolin are used as a Personal Care like- cosmetics and toiletries, medical application like- ointment bases, burns dressings and wound sprays and in different industrial applications like- Anti-corrosive effect on ferrous metals, Lubrication, Leather and textile industry, Paint and spray vanishes. Lanolin is not a significant allergen.

References

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