



LANOLIN, USP

INCI NAME: LANOLIN

CAS NUMBER: 8006-54-0

DESCRIPTION: LANOLIN is a pale yellow, tenacious, unctuous substance obtained from the wool of sheep, having a faint but characteristic odor.

CHEMISTRY: LANOLIN is classified chemically as a wax, being a complex mixture of naturally occurring esters and poly-esters of 33 high molecular weight alcohols (principally sterols) and 36 fatty acids. It is 98% ester minimum, of which the fatty alcohols and fatty acids comprise an approximately 50/50 ratio.

TYPICAL COMPOSITION OF LANOLIN

Esters of sterols and triterpene alcohols	35.4%
Esters of aliphatic alcohols	23.7%
Monohydroxyesters of sterols and of triterpene and aliphatic alcohols	20.0%
Di- and polyhydroxyesters and free diols	7.9%
Free aliphatic alcohols	5.6%
Free Sterols	4.1%
Free hydrocarbons	0.6%
Free fatty acids	0.5%
Unknowns	2.2%

TYPICAL SAPONIFICATION PRODUCTS OF LANOLIN

FATTY ACID	Aliphatic	31.1%
	Alpha-hydroxy	13.8%
	Omega-hydroxy	2.6%
	Unsaturated	2.4%

	Others	1.1%	SUBTOTAL = 51%
ALCOHOLS	Cholesterols	19.6%	
	Lanosterols	12.6%	
	Aliphatic	8.0%	
	1,2 diols	4.1%	
	Others	2.7%	SUBTOTAL = 47%
UNSPECIFIED		2.0%	

APPLICATIONS: COSMETICS

LANOLIN is an extremely effective emollient in restoring and maintaining the all important hydration (moisture balance) of the stratum corneum, and so prevents drying and chapping of the skin. Equally important, it does not alter the skin's normal transpiration. Lanolin has been shown to cause the water in the skin to build up to its normal level of 10-30%, by retarding without completely inhibiting trans-epidermal moisture loss. Lanolin has the unique property of absorbing twice its own weight of water. Lanolin has the physical properties of increasing adhesion to dry skin, and forming protective films on the skin. Lanolin is compatible with most fats and waxes used in cosmetics and pharmaceutical preparations. Lanolin is self emulsifying, producing very stable w/o emulsions with water and is often used in this hydrous form.

Lanolin is suggested for use in the following:

Baby preparations	Hair Protection	Lipsticks
Paste Shampoos	Shave Cream	Sunscreens
Burn Aids	Hand Soap	Lip Aids
Make-Up	Pet Products	
Hair Spray Plasticizer	Protective Creams and Lotions	

FOOD ADDITIVE APPLICATIONS:

Anhydrous Lanolin USP is approved for food additive use in the Code of Federal Regulations, Title 21, as follows:

Section 121.2562	Plasticizer for Rubber Articles coming in contact with food
Section 121.1059	Plasticizer for Chewing Gum Base
Section 121.2514	Surface Lubricant for Food Contact

Section 121.2519	Defoaming Agent for Paper or Paperboard in food contact
Section 121.2526	Component of Paper or Paperboard in contact with aqueous and fatty foods
Section 121.2531	Surface Lubricant used in manufacture of metallic articles
Section 121.2507	Component of Cellophane
Section 121.2557	Defoaming Agent used in Coatings

SPECIFICATIONS: LANOLIN is available in four different grades which meet the requirements for the U.S. Pharmacopoeia. These are Ultrafine, Superfine, Cosmetic, and Standard Grades. The CTFA has assigned the monograph Lanolin to these grades. In addition, all grades pass USP XXIV tests for acidity, alkalinity, water soluble acids and alkalines, water oxidizable substances, chloride, ammonia and petrolatum, in addition to the following:

	USP ULTRAFINE	USP SUPERFINE	USP COSMETIC	USP PHARMACEUTICAL
COLOR (GARDNER)	8 max.	9 max.	10 max.	11 max.
FATTY ACIDS (AS OLEIC)	0.56% max.	0.56% max.	0.56% max.	0.56% max.
IODINE VALUE (HANUS)	18-36	18 - 36	18 - 36	18 - 36
MELTING RANGE	38° - 44°C	38° - 44°C	38° - 44°C	38° - 44°C
WATER	0.25% max.	0.25% max.	0.25% max.	0.25%max.
RESIDUE ON IGNITION	0.1% max.	0.1% max.	0.1% max.	0.1% max.
FOREIGN SUBSTANCES (USP)				
Individual 10 ppm	Passes	Passes	Passes	Passes
Total 40 ppm max.	Passes	Passes	Passes	Passes
SOLUBILITY (ALL GRADES)	<u>@ 25°C</u>		<u>@ 75°C</u>	
Isopropyl Myristate	Soluble (Clear Solution)		Soluble (Clear Solution)	
Mineral Oil	SLI-Soluble		Soluble (Clear Solution)	
Castor Oil	Insoluble		Soluble (Clear Solution)	

Propylene Glycol Mono Laureate	SLI-Soluble	Soluble (Clear Solution)
Glycerine	Insoluble	Insoluble
Propylene Glycol	Insoluble	Insoluble
Acetone	Insoluble	Soluble (Clear Solution)
Ethyl Acetate	Soluble (Clear Solution)	Soluble (Clear Solution)
Ethyl Alcohol	Insoluble	Soluble (Clear Solution)
Water	Insoluble	Insoluble

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