



LIP CARE

FORMULATING LASTING PARTNERSHIPS

PRODUCTS DESIGNED WITH CARE

The Penreco product lines of Versagel[®], Versastique[™], petrolatums and mineral oils are used in numerous lip care applications such as lip oils, glosses, polish, liners, stains, balms, scrubs and lipstick. Each product line is available in multiple viscosity ranges and is suitable for a wide variety of personal care formulations.

For more than 100 years, Penreco has specialized in niche product blending to meet customer specific requirements. We're proud to offer safe, stable products that provide a moisturizing agent as well as a gel structure for ease of formulation.

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penreco[®]

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 CALUMET

LIP CARE

The lip's exposed membrane structure is different from other skin. Lips do not have the many protective layers of stratum corneum that is found in other skin. Lips also do not have the protection provided by the sweat glands and oil glands. Therefore, the lips are more vulnerable to any exposure to natural elements such as wind, cold, sun, etc. Long-term negligence of the lips will result in chapping, cracking, bleeding and the appearance of premature aging. Because of the structure of their skin, lips require consistent moisturization and protection if they are subject to exposure. We take these needs into account to help us produce our Drakeol® Mineral Oil, Petrolatum, Versastique™ and Versagel® that are used in lip care applications.

PRODUCT FORMULARIES

DEEP RED LIPSTICK

This lipstick applies easily and gives the lips a soft feel. Mineral oil and petrolatum help add moisturization.

	Ingredient	Weight (%)
A	Ricinus Communis (Castor) Seed Oil	41.9
	Red 40 Lake	5.7
	Red 27 Lake	2.4
	Mica (and) Titanium Dioxide	1.9
	Titanium Dioxide	.95
B	Caprylic/Capric Triglyceride	11.75
	Ultima Petrolatum	7.45
	Propylene Glycol Dicaprylate/Dicaprate	6.2
	Copernicia Cerifera (Caranuba) Wax	5.7
	Euphorbia Cerifera (Candelilla) Wax	5.7
	Beeswax	4.3
	Drakeol 21	2.85
	Microcrystalline Wax	2.65
	Tocopheryl Acetate	.4
	Propylparaben	.10
C	BHT	.05
	Fragrance	q.s.
	Total	100%

Procedure: Homogenize part A until uniform. Heat part B to 80 °C with stirring until the solids are melted. Add part A with stirring and allow the mixture to cool to 75 °C. Add part C. Pour into molds and cool.

Products in **bold** are supplied by Calumet Specialty Products Partners, L.P.

These formulas are distributed by Calumet Refining, LLC ("Calumet"), only for the purpose of promoting the use of mineral oil, petrolatum, Versastique and/or Versagel as components of secondary cosmetic products that are manufactured by Customers of Calumet and for no other purpose. Full Disclaimer and Limitation of Liability available at <https://penreco.com/formulation-disclaimer>.

MOISTURIZING LIP GLOSS (CLEAR GEL)

This lip gloss provides excellent occlusivity to help moisturize the lips. The Versagel ME1600 gives this clear, mineral oil-free gel a smooth, silky, nongreasy feel.

Ingredient	Weight (%)
Versagel ME 1600	81.95
Phenyl Trimethicone	7.0
Isopropyl Myristate	7.4
Macadamia Integrifolia Seed Oil	2.6
Isopropyl Isostearate	1.0
Propylparaben	.05
Total	100%

Procedure: Mix all ingredients except the propylparaben and heat slowly to 80-85 °C with stirring until the mixture is uniform. Allow blend to cool to 70-75 °C. Add propylparaben and stir until dissolved. Cool to 45 °C and add flavor and color if desired, then fill containers.

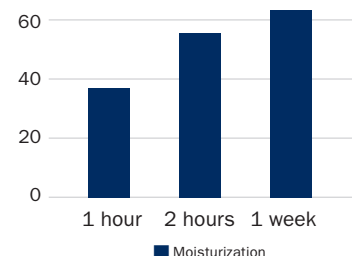
VERSAGEL ME 750 MOISTURIZATION AND LIP CONDITIONING BENEFITS STUDY

In the clinical study, participants applied Versagel ME 750 to the lips. Moisture content of the lips was measured with a NOVA Dermal Phase Meter (NOVA DPM) which measures the moisture in the skin by measuring an electrical parameter (impedance). Measurements were taken on the right and left side of the lower lip to quantify the moisture content of the stratum corneum. Overall, there was a 61% improvement in lip moisture content in 1 week. Additionally, lip condition was graded by skilled clinician comparing all improvements to baseline. The clinical grading of lip condition correlated with the instrumentally measured improvement in skin moisturization at 1h, 2h, and 1 week:

- Lip Lines: Decreased 62%
- Scaling: Decreased 27%
- Cracking: Decreased 22%

The high sensitivity of lip skin is well known and partly due to its much lower number of skin layers compared to regular skin. This makes lips highly susceptible to dryness. The excellent performance of Versagel ME in lip care applications is due to its exceptional mildness, moisturization, and lip conditioning benefits — which also makes it an excellent ingredient for leave-on skincare products such as creams and lotions.

% Improvement in Moisture Content



Study #C01-C138

VERSAGEL® & VERSASTIQUE™

A BETTER WAY TO FORMULATE

Our gelled technology is used in thousands of cosmetic, pharmaceutical and personal care products around the world. Our process gels various substrates in such a way that it promotes superior moisture retention by creating a continuous film enabling oil to be easily spread with no pooling of the product.

- Creates a film barrier for added moisturization, delivers superior stabilization and suspension properties.
- Provides enhanced fragrance retention and waterproofing properties.
- Versagel MX meets the EU Colipa Lip Care Requirements.

PRODUCT SPECIFICATIONS

	VISCOSITY @ 25 °C D2983 (cPs)	VISCOSITY @ 110 °C (cPs)	SPECIFIC GRAVITY @ 25 °C	SAYBOLT COLOR D156	FLASH POINT °C ASTM D92 (D93*)
VERSAGEL M (70 VIS White Mineral Oil)					
M 200	13,330 - 27,700	-	0.8421	+30	>175
M 500	47,000 - 57,000	-	0.8445	+30	>175
M 750	67,000 - 83,000	-	0.8434	+30	>175
M 1600	132,000 - 198,000	-	0.8425	+30	>175
VERSAGEL ME (Hydrogenated Polyisobutene)					
ME 500	50,000 - 75,000	-	0.8264	+30	>149
ME 750	85,000 - 110,000	-	0.8265	+30	>149
ME 1600	140,000 - 180,000	-	0.8280	+30	>149
ME 2000	245,000 - 325,000	-	0.8269	+30	>149
VERSAGEL MG (Hydrogenated Poly (C6-14 Olefin))					
MG 500 T	50,000 - 75,000	-	0.8204	+30	>175
MG 750 T	85,000 - 110,000	-	0.8169	+30	>175
MG 1600 T	140,000 - 180,000	-	0.8292	+29	>175
VERSAGEL ML (C12-15 Alkyl Benzoate)					
ML 750	99,000	-	0.9262	+30	>199
ML 1600	250,000	-	0.9272	+29	>199
VERSAGEL MN (Isononyl Isononanoate)					
MN 750	155,000	-	0.8540	+28	>149
MN 1600	265,000 - 339,000	-	0.8549	+29	>149
VERSAGEL MP (Isopropyl Palmitate)					
MP 750	82,000 - 108,000	-	0.8520	+30	>160
MP 1600	160,000 - 200,000	-	0.8520	+28	>160
VERSAGEL MX (600 VIS White Mineral Oil)					
MX 500 T	58,400	-	0.8735	+30	>250
MX 750 T	75,500	-	0.8687	+30	>250
MX 1600 T	132,000 - 198,000	-	0.8688	+30	>250
VERSAGEL P (Petrolatum)					
P 100	-	382	0.8649	+Opaque (Lovibond <3.0y)	>249
P 200	-	4,619	0.8650	+Opaque (Lovibond <2.0y)	>249
VERSAGEL SF (C13-14 Isoparaffin)					
SF	12,000	-	0.7824	+30	>96
VERSAGEL SQ (Squalane)					
SQ 500 T	52,000	-	0.8076	+28	>218
SQ 1600 T	138,000	-	0.8077	+29	>218
	VISCOSITY @ 130 °C (cPs) ASTM D2983	SPECIFIC GRAVITY @ 25 °C ASTM D4052	FLASH POINT ASTM D92 (°C)	MELTING POINT (°C) ASTM D3954	GARDNER COLOR
VERSASTIQUE LOW MELT ME 5 T	5.2	0.83	145	85	0.6

International Nomenclature of Cosmetic Ingredients (INCI)

Each **Versagel** product line includes the gelled (substrate) and Ethylene/Propylene/Styrene Copolymer, Butylene/Ethylene/Styrene Copolymer. All products are also available with Tinogard®, Pentaerythrityl Tetra-di-t-butyl Hydroxyhydrocinnamate and will be indicated by a T in the name.

Versastique Low Melt ME 5T: Hydrogenated Polyisobutene (and) Butyl Stearate, Isostearyl Alcohol, Hydrogenated Styrene/Butadiene Copolymer, Dibutyl Ethylhexanoyl Glutamide, Dibutyl Lauroyl Glutamide, Pentaerythrityl Tetra-di-t-butyl Hydroxyhydrocinnamate

Tinogard® is a registered trademark of BASF SE.

PETROLATUMS

CUSTOMIZED START TO FINISH

We are devoted to understanding the unique chemistry required to deliver customized petrolatum products to meet the specific needs of today's consumer products. Our manufacturing process delivers high purity, extremely stable and custom natural colors.

- Recognized by the FDA as an OTC "Skin Protectant"
- Non-comedogenic
- USP, EP and JP monographs
- Biodegradable and not animal tested

PRODUCT SPECIFICATIONS

	Melting Point, °F (°C) USP/ASTM D127	Viscosity SUS @ 210 °F ASTM D2161	Maximum Lovibond Color 2" Cell IP17	Consistency @ 77 °F USP/ASTM D937
WHITE PETROLATUM USP				
Ultima	130/140 (54/60)	60/75	0.5Y	155/180
Super	125/135 (52/57)	—	0.5Y	170/205
PenClear™ Super White	125/135 (52/57)	—	0.5Y	170/205
Regent	118/130 (48/54)	57/70	2.0Y	210/240
PenClear™ Snow White	125/135 (52/57)	64/75	2.0Y	170/205
PETROLATUM USP				
Royal	118/130 (48/54)	57/70	35.0Y 3.0R	210/240
Blond	125/135 (52/57)	68/82	35.0Y 2.0R	175/205
Amber	125/135 (52/57)	68/82	35.0Y 7.0R	175/205

If you are looking for an EU Colipa compliant petrolatum product please check with your sales representative.

WHITE OILS

TRUSTED SECURE SOLUTIONS

Penreco white oils of specific viscosities are refined to meet the purity specifications of the USP/NF and FDA. As trusted key ingredients, our manufacturing process delivers not only a high purity and safe product but it's also very stable over time.

- A full line of USP/NF Grades: 40 to 600 SUS
- Essentially neutral pH value
- Unparalleled testing competency
- Biodegradable and not animal tested

PRODUCT SPECIFICATIONS

	VISCOSITY		SPECIFIC GRAVITY	FLASH POINT ASTM D92		POUR POINT ASTM D97	
	ASTM D7042 SUS @ 100 °F	ASTM D7042 cSt @ 40 °C		(Typical)		(Typical)	
				°F	°C	°F	°C
MINERAL OIL USP							
Drakeol 35	340/365	65.8/71.0	0.8640/0.8810	467	242	3	-16
Drakeol 34	370/410	72.0/79.5	0.8580/0.8720	478	248	5	-15
Drakeol 32	312/330	60.0/63.3	0.8560/0.8760	459	237	5	-15
Drakeol 21	200/215	38.4/41.5	0.8530/0.8760	439	226	5	-15
Drakeol 19	180/190	34.9/37.3	0.8520/0.8760	434	223	5	-15
LIGHT MINERAL OIL NF							
Drakeol 13	125/135	24.2/26.3	0.8480/0.8670	391	199	5	-15
Drakeol 10	102/115	19.0/21.9	0.8380/0.8640	407	208	3	-16
Drakeol 9	80/90	14.2/17.0	0.8330/0.8610	391	199	-15	-26
Drakeol 7	65/75	10.8/13.6	0.8330/0.8610	369	187	-15	-26

Drakeol 34S, Drakeol 34EU and Drakeol 600 meet the EU Colipa Lip Care Requirements.

We are vertically integrated which gives optimal feedstock availability and purity protection to the destination. The high-temperature manufacturing process of our products provides for extraordinary purity. The Calumet refinery in Karns City, PA meets ISO 9001:2015 Standards by Lloyd's Register Quality Assurance.

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