



SonneNatural™

Product guide

sonneborn™

A HOLLYFRONTIER BRAND

sonneborn™

SONNEBORN is a leading global brand producing specialist ingredients of the highest purity for over 100 years. Since 1903, the name Sonneborn, has been synonymous with the world's highest quality refined hydrocarbons for personal care and pharmaceutical applications.

Through progressive technical innovation, we transcend performance boundaries to enable customers to create more advanced and innovative products. Sonneborn keeps you ahead of emerging opportunities with solutions like our SonneNatural line of plant-based products to help you achieve industry-leading formulation objectives.

SonneNatural™

NATURAL AND PERFECT. Let's face it. Everything that is "perfectly natural" is not always "naturally perfect". Consider the most valuable and precious diamond, colorless and brilliantly scintillating. Perfectly natural? Yes. Naturally perfect? No, it takes highly skilled experts to transform what nature provides into the perfect finished product. Products that are "all natural" are oftentimes inferior substitutes regarding quality, odor, color, and performance. That is why the Sonneborn SonneNatural brand products are your best choice for 100% natural, vegetable based emollients. As the global leading supplier of the highest quality petrolatum, we utilize our expertise in petrolatum development, hydrocarbon formulating and manufacturing capabilities to make the finest range of natural alternatives imaginable.

CHEMISTRY. BY NATURE. Petroleum jelly has long been a staple ingredient for personal care and pharmaceutical formulations by adding exceptional lubricity and moisture protection to lotions, creams, ointments and hand cleaners. While the demand for high performing emollients and moisture retention ingredients prevails, the desire for elegant, yet all vegetable-based alternatives continues. The SonneNatural brand offers a full range of 100% natural alternatives to traditional petrolatum. The chart on the following page summarizes the physical properties of each SonneNatural product as compared to petrolatum product White Protopet 1S.





SonneNatural Property Comparison to Petrolatum

Property	Test Method	White Protobet™ 1S	SonneNatural	SonneNatural H-203	SonneNatural J-207	SonneNatural Selects
Cone Penetration	ASTM D-937	180-210	170	195	210	190
Drop Melting Point, °C	ASTM D-127	54-60°C	52°C	49°C	46°C	50°C
Color, Lovibond 2"	IP 17	1.5 Y Max	2.0 Y	1.3 Y	1.0 Y	2.7 Y
Viscosity @ 100°C, cSt	ASTM D-445	~12.0	~16.5	~14.6	~11.8	~14.0

Information on natural index and natural origin index as per ISO 16128 is available upon request.

THE 100% PERFECTLY NATURAL SOLUTION.

The SonneNatural products impart optimal moisture retention, with a wide range of emolliency and rheological properties to fit your specific formulation requirements. SonneNatural products are ideal natural and renewable options for use in cosmetic applications where an emollient, moisturizer, solubilizer or dispersing agent is required.

The chart below highlights the features and benefits of SonneNatural brand products.



SonneNatural Features and Benefits

Features	Benefits
All-Natural, Vegetable Product	INCI Name: Vegetable Oil (US), Olus Oil (EU)
Physical Properties/TEWL Comparable to Petrolatum	Excellent Moisture Retention
Stringent Quality Control	Consistent Quality
Superior UV and Microbial Stability	Naturally Preserved, Long Shelf Life
USP <51> Compliant	Does Not Support Microbial Life
CTFA Compliant: E. coli, S. aureus, and P. aeruginosa	Good Safety Profile
Global Supplier	Supply Chain Management

APPLICATIONS. The SonneNatural Line is applicable to many skin and hair products. In skin care, SonneNatural is an excellent moisturizer and skin protectant, keeping skin soft, supple and pliable. In hair care applications, SonneNatural is used in conditioning shampoos, rinse-off and leave-on conditioners, and in hair treatment formulas. In styling and finishing products, SonneNatural adds anti-static properties, good comb-ability, defrizzing and provides luster plus shine. In color cosmetics, specifically for anhydrous formulations, SonneNatural offers solubilizing, emolliency and color dispersion properties.

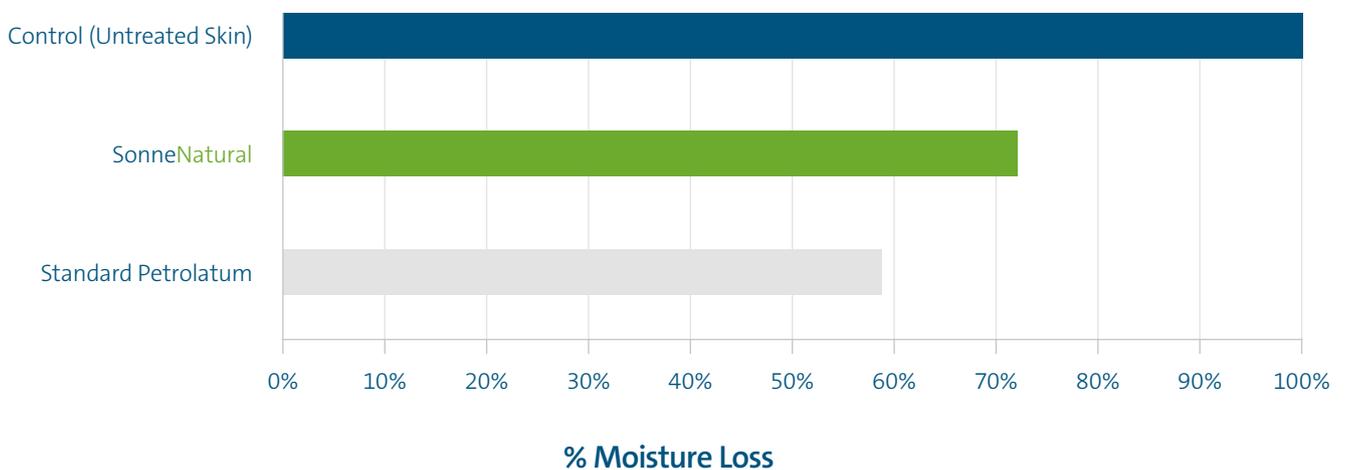
Other applications include soap, shaving cream, body scrub, antiperspirant, deodorant, wipes and other products. The uses for SonneNatural are limitless and offer unique properties that enhance personal care products naturally.

MOISTURE RETENTION AND EMOLLIENCY. Ideal skin care formulas typically contain an ingredient that improves barrier function while helping to supplement the natural epidermal lipids. Keeping the skin supple and pliable are very important features for creams and lotions. Since petrolatum has long been the benchmark for preventing moisture loss through the skin, Sonneborn has focused on developing products with similar skin protection.

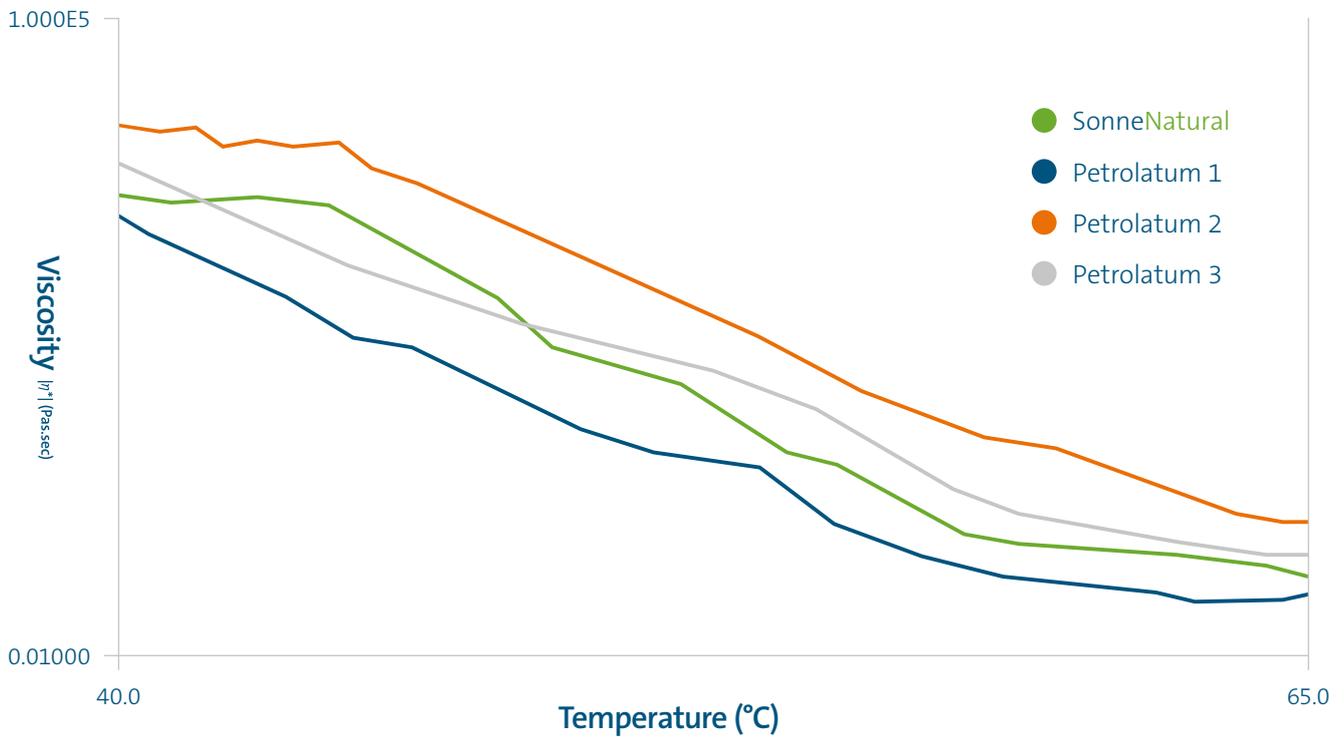
Transepidermal Water Loss data is available showing that SonneNatural exhibits improved skin moisturization.



SonneNatural TEWL Comparison to Petrolatum



SonneNatural Complex Viscosity



RHEOLOGY. SonneNatural’s rheology, shown above, is similar to our standard petrolatum so it behaves in formulations like petrolatum and therefore makes a great natural alternative. SonneNatural adds substantive feel and body to formulations without the negative attributes associated with fillers, such as starch or clay.

THE SonneNatural CHOICE. Sonneborn recognizes the importance of even the most subtle, yet specific differences that are often crucial to defining a finished formula. As such, we continue to apply our technical expertise in growing our line of 100% naturally derived emollients. Despite the notion that there is only “one petrolatum”, there are in fact numerous combinations of attributes that lead to uniquely different petrolatum

products. Similarly, Sonneborn applies this same developmental expertise in creating a range of vegetable based, natural emollients. Together, SonneNatural, SonneNatural Selects and SonneNatural 200 Series offer new benchmarks, delivering optimal moisturization and emolliency benefits of petrolatum along with a wide range of sensory characteristics, appearance and spreadability to best meet any formula objective.

Choosing the right product for your specific formulation depends upon both the desired aesthetic & sensory attributes as shown in the chart on page 5, and additional benefits described on pages 5-6. Key sensory properties to consider in choosing the right SonneNatural product are desired cushion, gloss, slip, playtime and spreadability.

Product	Cushion	Gloss	Slip	Play Time	Spreadability
SonneNatural	++++	+++	+	+	++++
SonneNatural H-203	+++	++	+	+	+
SonneNatural J-207	+++	++++	+++	+++	++++
SonneNatural Select – Jojoba Oil Enhanced	+++	++++	++	+++	+++
SonneNatural Select – Meadowfoam Seed Oil Enhanced	+++	+++	+++	+++	++++
SonneNatural Select – Extra Virgin Olive Oil Enhanced	++++	++	++	+++	++++

+ = low ++ = low-medium +++ = medium ++++ = high

SonneNatural is a soft, translucent-yellow, medium gloss product. It has a creamy application, excellent spread, low slip and nice cushiony feel. The combination of softness and luxurious feel makes this product an excellent natural alternative to petrolatum in cosmetic formulations. SonneNatural also has almost no odor and is color stable.

SonneNatural 200 Series offers two, distinctly unique products. SonneNatural H-203 and SonneNatural J-207.

SonneNatural H-203 offers the firmest base in the SonneNatural line.

- Medium cushion, medium to low gloss, low slip, short playtime, and minimal spreadability
- The short play time delivers body and tack to formulations
- Ideal for hair styling products such as putty and pastes, and for lip balms that require a more compact feel

SonneNatural J-207 offers the natural, classic look and feel of neat petroleum jelly.

- Soft with medium cushion, very glossy with medium slip and playtime, and high spreadability
- Its properties and appearance fit best for a neat petroleum jelly replacement, or for use in elegant lip moisture balms or high-end hair pomades

SonneNatural Select is an extension of our 100% certified vegetable based line, blended with botanicals rich in Omega 3, Omega 6 and Omega 9 fatty acids. They provide emolliency with a range of aesthetic and sensory attributes, with botanical benefits for ease in formulation and product enhancement.

SonneNatural Select - Jojoba Oil Enhanced utilizes the seed oil of the jojoba plant.

- An all-natural blend rich in Omega 9 fatty acids
- It is soft and glossy, and has a nice smooth application
- Jojoba oil is the natural oil closest in chemical composition to human sebum





SonneNatural Select – Meadowfoam Seed Oil Enhanced

utilizes the seed oil of the meadowfoam plant.

- It is alternative rich in Omega 6 and Omega 9 fatty acids
- Offers the ultimate silky, smooth application with medium cushion and gloss
- Meadowfoam seed oil adheres well to the skin and helps to rejuvenate skins appearance

SonneNatural Select – Extra Virgin Olive Oil Enhanced

utilizes extra virgin olive in its formulation.

- Offers an all-natural blend rich in Omega 3, Omega 6 and Omega 9 fatty acids
- Has a smooth application with medium to high cushion and medium to low gloss
- Olive oil naturally moisturizes the skin and aids its elasticity

All products are certified by Sonneborn to contain 100% natural ingredients of vegetable origin.

Chemistry. By Nature.™ The Sonneborn family of products have been soothing people since they were babies. We continue to build on our innovation, developing new and better products that deliver a natural fit in today's world. The company that has brought you the purest, highest quality hydrocarbon chemistry by nature, now brings you the finest vegetable chemistry by nature. As always, we are anxious to hear from you so we can start on something new.

SonneNatural, SonneNatural 200 Series and **SonneNatural Select** brand of products. Nature's Finest Emollients.



You need the
freedom to innovate.
We'll make it real.

sonneborn[™]

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