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sonneborn®

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Personal Care & Pharmaceutical

Product Guide



sonneborn®

sonneborn®

A Focus on Innovation. An Eye on Tradition. An Emphasis on Quality and Service.

For more than 100 years, Sonneborn has been setting industry standards the world over for the finest possible white oils, petrolatums, and microcrystalline waxes in beauty, personal care and pharmaceutical products.

And then, most recently, we brought you SonneNatural, nature's finest vegetable-based emollients.

We can't wait to show you what the next 100 years will bring....

PERSONAL CARE PRODUCTS touch all of our lives in many ways, and savvy consumers today demand safety, high quality and performance-driven ingredients in the products they choose. For this reason, formulators rely on suppliers that are dependable, deliver superior quality, value and innovative solutions.

GLOBAL LEADERSHIP. Sonneborn is the global leader in the manufacture and supply of the highest quality refined hydrocarbons, including White Oils, Petrolatums, Microcrystalline Waxes and SonneNatural 100% vegetable-based emollients for Personal Care, Pharmaceutical and Cosmetic markets. Sonneborn is committed to providing

customers with premium products, progressive technical capabilities and dependable service so that they receive the very best value in the industry. Together with continued growth in fundamental product lines, Sonneborn has applied core strengths to transcend traditional technologies and deliver exciting new products to the market.

The Sonneborn production sites in North America and Europe have a 100-year history of manufacturing and applications expertise. We offer a similar product line worldwide enabling us to more efficiently serve the needs of our multinational customers. Sonneborn is the world's only producer that offers this global reach and depth of experience.

PRODUCT CHOICE. Sonneborn offers the broadest product line in the industry, and along with our custom-formulating ability we can meet your most exacting specifications. We provide grades that meet the strict standards of USP, NF, BP, DAB, French Codex, EuP, Japanese and other pharmacopoeias. We also provide products that conform to USDA and FDA classifications.



SonneNatural® Property Comparison to Petrolatum

Property	Test Method	White Protopet 15	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

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

SonneNatural® brand products are certified by Sonneborn to contain 100% natural ingredients of vegetable origin. To learn more about SonneNatural, please request our detailed brochure, *SonneNatural® Nature's Finest Emollient*, or download the PDF from our website, www.sonneborn.com.

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® NATURE'S FINEST EMOLLIENTS is Sonneborn's branded line of natural and renewable ingredients for use in cosmetic applications where an emollient, moisturizer, solubilizer or dispersing agent is required. SonneNatural, SonneNatural 200 Series and the SonneNatural Select Line are elegant, 100% vegetable-based products that offer the sensory, moisture retention, emolliency and rheological properties consumers have come to expect from petrolatum substitutes.

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



SONNEBORN WHITE OILS are chemically and biologically stable, non-comedogenic and do not support pathogenic bacterial growth. These properties make white oils the standard, ideal blending base for personal care and pharmaceutical applications. Their inert nature makes them easy to work with, as they lubricate, smooth, soften, extend and resist moisture in many formulations. You can find our USP and NF grade white oils in products ranging from baby oils and lotions to sunscreens, tissues and antibiotics.

Sonneborn supplies USP and NF grades that meet FDA 21 CFR 172.878 regulations. Our USP purity white mineral oils have viscosities that range from 35 cSt to 420 cSt, and pour points that range from -6°C to less than -21°C for our naphthenic grades. Our NF light mineral oil grades have lower viscosities, ranging from 7 cSt to 30 cSt, and pour points as low as -24°C.

Typical Properties of Standard Sonneborn USP and NF Grade White Oils

	Viscosity ASTM D-445 cSt @ 40°C ^a	Viscosity ASTM D-2161 SUS @ 100°F ^b	Specific Gravity ASTM D-4052 @ 25°C/25°C ^c	Pour Point ASTM D-97 °C (°F)	Flash Point ASTM D-92 °C (°F)
USP MINERAL OIL					
Hydrobrite HV	230-290	1400	0.860/0.890	-6 (20)	277 (530)
Hydrobrite 1000	180-240	1000	0.860/0.885	-6 (20)	274 (525)
Kaydol	64-70	350	0.869/0.885	-21 (-5)	220 (430)
Gloria	39-42	210	0.859/0.880	-18 (0)	204 (400)
Protol	35-37	185	0.859/0.875	-18 (0)	202 (395)
LIGHT MINERAL OIL, NF					
Rudol	28-30	150	0.852/0.870	-18 (0)	198 (390)
Ervol	24-26	130	0.849/0.865	-18 (0)	190 (375)
Benol	18-20	100	0.839/0.865	-21 (-5)	186 (365)
Blandol	14-17	85	0.839/0.859	-21 (-5)	186 (365)
Carnation	11-14	70	0.829/0.859	-24 (-10)	186 (365)
Klearol	7-10	55	0.827/0.846	-24 (-10)	154 (310)
40 Oil	4-5	40	0.810/0.830	+3 (+35)	136 (275)

^a 104°F ^b 37.8°C ^c 77°F

All above grades are stabilized with Vitamin E, have no odor or taste and are water white (Saybolt color +30), and meet FDA 21 CFR 172.878 and 21 CFR 178.3620(a) requirements. All above grades meet the purity requirements of USP or NF. Hydrobrite 1000 and 40 Oil may have viscosities or gravities outside the monograph limits for USP or NF. We can supply products meeting the current requirements of BP, DAB, French Codex, EuP, Japanese, and other pharmacopoeias. Special viscosity and pour point oils are available upon request.

Sonneborn White Oil Applications

	Hydrobrite HV	Hydrobrite 1000 PO	Hydrobrite PVC Oil	Kaydol	Gloria	Protol	Ruddol	Ervol	Benol	Blandol	Carnation	Klearol
PERSONAL CARE												
Baby Oil										X	X	
Body Wash		X								X	X	X
Cold Cream				X	X	X	X	X	X	X	X	
Ethnic Hair Care Products		X		X			X	X	X	X	X	X
Eye Make-Up										X	X	X
Hair Conditioner										X	X	X
Hair Styling & Finishing		X		X			X			X	X	
Lipsticks & Lip Balms		X								X	X	X
Make-Up Removers										X	X	X
Moisturizing Cream		X		X	X	X	X	X	X	X	X	
Shampoo										X	X	X
Sun Tan Lotion				X						X	X	
Sun Tan Oil				X						X	X	
Waterless Hand Cream				X	X	X	X			X	X	X
PHARMACEUTICAL												
Animal Health/Veterinary	X	X	X	X	X	X	X	X	X	X	X	X
Excipients	X	X	X	X	X	X	X	X	X	X	X	X
Laxatives/Internal Lubricant				X			X			X	X	
Medicated Ointments		X		X	X		X			X	X	

SONNEBORN HIGH SPECIALTY HYDROCARBONS, specifically Lilac (INCI C14 – 22 Alkane) for Personal Care applications, is a highly refined blend of alkanes and low cost alternative to D5 silicones. Advantages to using Lilac in formulations is its ability for blending at much higher temperatures, higher safety threshold, and preferred after-feel compared to other alternatives on the market. Lilac is a hydrophobic, colorless, odorless liquid that is chemically and biologically stable, is

non-comedogenic and does not support pathogenic bacterial growth.

Lilac has good spreadability, short play time and a powdery, soft after-feel. The combination of emolliency with silicone-like properties makes this a very versatile product in cosmetic applications where an emollient and moisturizer is required.

Product Information		
INCI Name	C14 – 22 Alkane	
CAS Number	8042-47-5	
CAS Registry Name (s)	White Mineral Oil, Paraffin Oil	
Typical Features		
Specific Gravity @ 25°C	ASTM D4052	0.816
Viscosity @ 25°C, cSt	ASTM D445	6.70
Color/Appearance	Visual	Colorless
Refractive Index	ASTM D1218	1.450
Boiling Point	ASTM D2887	>230°C
Flash Point	ASTM D92	>120°C (248°F)
MSDS Section 3	Hazards	None
MSDS Section 9	Odor	None
Color	ASTM D156	30 min.

Lilac Emollient Applications
PERSONAL CARE
AP/DEO
Body Wash
Hair Conditioner
Hair Styling & Finishing
Hand Cleaners
Moisturizing Lotions
Permanent Waves
Scalp Protector
Skin Creams & Lotions
Sun Care Products
PHARMACEUTICAL
Dental Adhesive Formulations
Medicated Ointments
Suppositories



SONNEBORN MICROCRYSTALLINE WAXES are produced as primary products, not by-products, and thus Sonneborn ranks among the most steadfast suppliers. Our Multiwax brand is recognized worldwide as the quality standard for the whitest, most consistent grades of microcrystalline wax available. In hair styling products, Multiwax provides the cream-wax texture for light-weight, natural hold in contemporary styling. In cosmetics, Multiwax offers the gloss, adhesion and bonding required for high quality lipsticks and balms. As natural bases in cold creams and ointments, they harden, lubricate, carry medication and protect against moisture.

Multiwax is used as a rheology modifier for creams and ointments.

Standard Multiwax grades meet FDA CFR 172.886 and 178.3710 requirements for food-grade petroleum waxes. The grades vary in color from white to yellow, and in such physical properties as hardness and melting point. The hardness of our standard waxes ranges from 15 to 80 on the ASTM D-1321 needle penetration test.

Sonneborn can customize physical properties to meet customer specifications. We ship waxes as bulk liquids, or in cartons or pallets.

Typical Properties of Sonneborn Microcrystalline Waxes

	Melting Point ASTM D-127		Needle Penetration @ 77°F (25°C) ASTM D-1321	Viscosity @ 210° F		Color Visual ASTM D-1500	Flash Point COC ASTM D-92 °F (°C)
	°F	°C		SUS ^a	cSt ^b		
180-W	175/188	79/87	15/22	75 Min.	14.3 Min.	White	+16 Min. ^c 530 (277) Min.
180-M	175/188	79/87	15/22	75 Min.	14.3 Min.	Light Yellow	2.0 Max. 530 (277) Min.
ML-445	170/180	77/82	25/35	75/90	14.3/18.0	Light Yellow	2.0 Max. 530 (277) Min.
W-445	170/180	77/82	25/35	75/90	14.3/18.0	White	+16 Min. ^c 530 (277) Min.
MW-7545	170/185	77/85	35/70	75/100	14.3/20.4	White	+16 Min. ^c 530 (277) Min.
W-835	165/175	74/79	60/80	75/90	14.3/18.0	White	+16 Min. ^c 475 (246) Min

^a ASTM D-2161

^b ASTM D-445

^c ASTM D-156 (Saybolt color)

The above waxes meet the requirements for Microcrystalline Wax NF as per the National Formulary (current revision), and comply with the requirements of 21 CFR 172.886 and FDA 21 CFR 172.3710 for food grade petroleum waxes. Many of the above grades are available on special order in colors other than those listed above.

Sonneborn Multiwax Microcrystalline Applications

	180-W	180-M	ML-445	W-445	MW-7545	W-835
Candles	X	X	X	X	X	
Cosmetics	X		X	X	X	X
Dental Floss				X		
Dental Products			X	X	X	X
Lip Care			X	X	X	
Pharmaceutical Grades	X	X	X	X	X	X

SONNEBORN PETROLATUMS represent the world's broadest line of standard petrolatum, custom-compounded and related products to meet any formulation requirement. Petrolatum hydrating properties set a standard against which other moisturizers are compared, and are valued by personal care and pharmaceutical companies as safe, highly effective and economical formulation bases. Petrolatum adds lubricity and moisture loss resistance to lotions, creams, ointments and hand cleaners. Odorless and tasteless, they range in color from white to yellow, and differ from one another in consistency and shear strength.

Our unique manufacturing process allows us to offer the whitest petrolatums available today, including Super White Protopet, Super White Fonoline, and Perfecta Grades. Perfecta is an industry standard for ointment bases and other high quality, narrow specification critical applications. Our medium-consistency Protopet grades are used in many fine cosmetics and ointments, and softer Fonoline grades are used in petroleum jellies and high-solids ointments. Sonneborn USP petrolatums meet FDA 21 CFR 172.880 requirements.

Typical Properties of Standard Sonneborn Petrolatums

USP Grades	Melting Point USP ASTM D-127		Consistency ASTM-D-937 USP	Viscosity @ 210°F ASTM D-445 SUS (cSt)	Color Lovibond
	°C	°F			
PROTOPET					
Alba	54/60	130/140	180/210	67 (12)	1.1 Y ^b
Super White	54/60	130/140	180/210	67 (12)	0.6 Y ^b
White 1S	54/60	130/140	180/210	67 (12)	1.5 Y ^a
White 2L	54/60	130/140	180/210	67 (12)	8Y 0.6R ^a
White 3C	54/60	130/140	180/210	67 (12)	12Y 1.2R ^a
Yellow 2A	54/60	130/140	180/210	67 (12)	30Y 2.5R ^a
PERFECTA					
Perfecta	57/60	135/140	180/210	60 (10)	0.3 Y ^b
FONOLINE					
Super White	50/56	122/133	195/230	60 (10)	0.5 Y ^b
White	53/58	127/137	210/245	65 (11)	1.7 Y ^a
Yellow	53/58	127/137	210/245	65 (11)	30Y 2.5R ^a
SONNECONE					
SonneCone	38/51	104.4/125	240/300	39 (3.95)	0.2Y

^a 2" cell

^b 3" cell

The above grades have no odor, and meet the requirements for USP and FDA 21 CFR 172.880. Products are available conforming to the requirements of BP, DAB, French Codex, EuP, Japanese and other pharmacopoeias. Special grades can be formulated to meet particular customer specifications.

SonneCone® SENSORY ENHANCED PETROLATUMS.

When developing new ingredients for personal care formulations, we want to balance physical properties along with the desired sensory profile. Our focus on sensory attributes led us to the development of SonneCone CM and SonneCone DM1. Both products provide an enhanced skin-feel, while still delivering the functional benefits of petrolatum. These exceptional emollients are ideal for elegant formulations that offer the functional moisturizing benefits of petrolatum. The SonneCone products have very distinct attributes that complement many personal care formulations with their silky skin-feel, excellent spread-ability, easy handling, and smooth application. Both SonneCone CM and SonneCone DM1 melt at skin temperature.

Due to their smooth and silky-skin feel, the SonneCone products can partially or completely substitute for silicone oils including Cyclomethicone (Cyclopentasiloxane) and Dimethicone (Polydimethylsiloxane) in most personal care formulations. Each SonneCone product has a unique sensory profile to best fit any particular application. Both are 100% USP Petrolatums that also meet the FDA requirements for food grade petrolatum in 21CFR 172.880.

SonneCone emollients are a fresh, new approach to the array of Sonneborn petrolatum products. While there may be no better alternative to the many benefits of petrolatum in skincare and pharmaceutical ointments, with the addition of SonneCone emollients, there are now more unique choices.

SonneCone® CM

Soft, translucent off-white
High gloss
Medium play time
Very low cushion
Powdery, soft after-feel

SonneCone® DM1

Soft, translucent-white
Medium gloss
Long play time
Very low cushion
Soft, dry after-feel



Typical Properties of Sonneborn Sonojell® and Mineral Jelly

USP Grades	Melting Point		Consistency ASTM-D-937 USP	Viscosity @ 210°F ASTM D-445 SUS (cSt)	Color Lovibond
	°C	°F			
SONOJELL					
Sonojell #4	42/44	107/112 ^d	90/125	38 (3.8)	0.5 Y ^b
Sonojell #9	42/49	107/120 ^c	150/170	39 (4.1)	0.5 Y ^b
MINERAL JELLY					
Mineral Jelly #10	40/46	105/115	290/350	40 (4.4)	1.0 Y ^a
Mineral Jelly #14	38/43	100/110 ^d	200/225	40 (4.4)	1.0 Y ^a
Mineral Jelly #17	32/38	90/100 ^e	340/400	40 (4.4)	1.0 Y ^a

^a 2" cell ^b 3" cell ^c ASTM D-127, Drop M.P. ^d ASTM D-938, Cong. Pt. ^e ASTM D-97, Pour Pt.
The above grades have no odor and meet FDA 21 CFR 172.880 for UV absorbance. They also meet USP purity requirements. However, they do not qualify as USP because they do not meet some of the USP physical requirements; i.e., specific gravity, consistency and/or melting point.

Sonneborn Petrolatum Applications

	Perfecta	Super White Fonoline	White Protopet 1S	White Fonoline	Yellow Protopet 2A	Yellow Fonoline	Mineral Jelly	Sonojell	SonneCone CM	SonneCone DM1
PERSONAL CARE										
AP/Deo		X	X	X						
Body Wash		X	X	X						
Creams & Lotions	X	X	X	X	X	X	X	X	X	X
Hair Conditioner										
Hair Styling & Finishing	X	X	X	X	X	X	X	X	X	X
Hand Cleaners	X	X	X	X	X	X	X	X	X	X
Lip Balm		X	X	X						
Massage Cream									X	X
Moisturizing Lotions	X	X	X	X	X	X	X	X	X	X
Permanent Waves	X	X	X	X	X	X	X	X		
Petroleum Jelly		X		X						
Scalp Protector	X	X	X	X	X	X	X	X	X	X
Sun Care Products	X	X	X	X	X	X	X	X	X	X
PHARMACEUTICAL										
Barrier/Skin Protectants	X	X	X	X					X	X
Dental Adhesive Formulations	X	X	X	X						
Medicated Ointments	X	X	X	X			X	X	X	X
Suppositories		X	X	X			X	X		