

Personal Care & Pharmaceutical

Product Guide



sonneborn™

AN HF SINCLAIR BRAND

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

For more than 120 years, Sonneborn, an HF Sinclair brand, has been setting industry standards for the finest 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 120 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 production 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 120-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.



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 310 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 4 cSt to 30 cSt and pour points as low as -24°C.

TYPICAL PROPERTIES OF STANDARD SONNEBORN USP AND NF GRADE WHITE OILS

PRODUCT	VISCOSITY		SPECIFIC GRAVITY	POUR POINT	FLASH POINT
	ASTM D445 cSt @ 40°C	ASTM D2161 SUS @ 100°F	ASTM D4052 @ 25°C/25°C	ASTM D97 °C (°F)	ASTM D92 °C (°F)
USP MINERAL OIL					
Hydrobrite™ HV*	230/310	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)	221 (430)
Gloria™	39/42	210	0.859/0.880	-18 (0)	204 (400)
Protol™	35/37	185	0.859/0.875	-15(5)	202 (395)
NF LIGHT MINERAL OIL					
Rudol™	28/30	150	0.852/0.870	-15(5)	199 (390)
Ervol™	24/26	130	0.849/0.865	-18 (0)	191 (375)
Benol™	18/20	100	0.839/0.865	-15(5)	185 (365)
Blandol™	14/17	85	0.839/0.859	-15(5)	185 (365)
Carnation™	11/14	70	0.829/0.859	-24 (-10)	185 (365)
Klearol™	7/10	55	0.827/0.846	-12 (10)	154 (310)
40 Oil*	4/5	40	0.810/0.830	-3(27)	135 (275)

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 HV, 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.

*Hydrobrite HV, Hydrobrite 1000, and 40 Oil may have viscosities or specific gravities outside the monograph limits for USP or NF.

SONNEBORN WHITE OIL APPLICATIONS

	Hydrobrite™ HV	Hydrobrite™ 1000 PO	Hydrobrite™ PVC Oil	Kaydol™	Gloria™	Protol™	Rudol™	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 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 finest 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 ASTM D127		CONSISTENCY ASTM D937	VISCOSITY @ 210°F ASTM D2161 (D445)	COLOR
	°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	180/215	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 2A	53/58	127/137	210/245	65 (11)	30Y 2.5R ^a
SONNECONE™					
SonneCone™ DM1	38/51	100.4/125	240/300	39 (3.95)	0.2Y
SonneCone™ CM	38/51	100.4/125	240/300	39 (3.95)	0.2Y
ULTRA-PURE					
Cumulus™	52/59	126/138	135/165	75 (14)	0.1Y ^a

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 spreadability, 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 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 21 CFR 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 SONO JELL™ AND MINERAL JELLIES

USP GRADES	MELTING POINT ASTM D127		CONSISTENCY ASTM D937	VISCOSITY @ 210°F ASTM D2161 (D445)	COLOR
	°C	°F			
SONO JELL					
Sono Jell #4	42/44	107/112 ^d	90/125	38 (3.8)	0.5 Y ^b
Sono Jell #9	42/49	107/120 ^c	150/170	39 (4.1)	0.5 Y ^b
MINERAL JELLIES					
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 D127, Drop M.P.; d. ASTM D938, Cong. Pt.; e. ASTM D97, Pour Pt.

The above grades have no odor and meet U.S. 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™	SuperWhite Fonoline™	White Protopet IS™	White Fonoline™	Yellow Protopet 2A™	Yellow Fonoline™	Mineral Jelly™	Sono Jell™	SonneCone™ CM	SonneCone™ DM1	Cumulus™ Ultra-Pure
PERSONAL CARE											
AP / Deo		X	X	X							
Body Wash		X	X	X							
Creams & Lotions	X	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							X
Message Cream									X	X	
Moisturizing Lotions	X	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	X
Dental Adhesive Formulations	X	X	X	X							
Medicated Ointments	X	X	X	X			X	X	X	X	X
Suppositories		X	X	X			X				

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 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 MULTIWAX MICROCRYSTALLINE WAXES

PRODUCT	MELTING POINT ASTM D127		NEEDLE PENETRATION @ 77°F (25°C)	VISCOSITY @ 210°F		COLOR		FLASH POINT COC ASTM D92
	°F	°C	ASTM D1321	SUS ^a	cSt ^b	Visual	ASTM D-1500	°F (°C)
180-W	175/188	79/87	15/25	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.
7545	170/185	77/85	35/70	75/100	14.3/20.4	White	+16 Min. ^c	500 (260) 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 FDA 21 CFR 172.886 for food grade petroleum waxes. Many of the above grades are available on special order in colors other than those listed above.

MULTIWAX MICROCRYSTALLINE APPLICATIONS

	180 - W	180 - M	ML - 445	W - 445	MW - 7545	W - 835
Candles	X			X	X	
Cosmetics	X			X	X	X
Dental Floss				X		
Dental Products				X	X	X
Lip Care			X	X	X	
Pharmaceutical Grades	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 are 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 are 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 @ 40°C, cSt	ASTM D445	4.2
Color / Appearance	Visual	Colorless
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

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



SonneNatural™ PROPERTY COMPARISON TO PETROLATUM

PROPERTY	TEST METHOD	WHITE PROTOPET 1S	SonneNatural	SonneNatural H-203	SonneNatural J-207
Cone Penetration	ASTM D-937	180-210	170	195	210
Drop Melting Point	ASTM D-127	54–60°C	52°C	49°C	46°C
Color, Lovibond 2"	IP 17	1.5 Y Max.	2.0 Y	1.3 Y	1.0 Y
Viscosity @ 100°C, cSt	ASTM D-445	~12.0	~16.5	~14.6	~11.8

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, sonneborn.com

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 ingredients now brings you the finest vegetable based emollients. As always, we are anxious to hear from you so we can start on something new.

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