



# Experience You Can Trust, **Innovation You Can Build On.**

Meet the products that bring your vision to life.



White Oils, Plastics Oils, PVC Oils, Petrolatums, Waxes, Petroleum Distillates,  
Plant-based Emollients, Refrigeration Oils, Compressor Lubricants, Agricultural Oils, Alkanes

**sonneborn**<sup>™</sup>

AN HF SINCLAIR BRAND



Our products,  
**shaped by your needs.**

## **A legacy of innovation. A future of groundbreaking collaboration.**

Sonneborn, an HF Sinclair brand, has produced specialty ingredients of the highest purity and quality for over 100 years. Through progressive technical innovation, Sonneborn products transcend performance boundaries, enabling customers to create more advanced and innovative products. Sonneborn solutions like our SonneNatural™ line of plant-based products keep you ahead of emerging opportunities and help you achieve industry-leading formulation objectives.

### **HISTORY**

The Sonneborn brand facility in Petrolia, Pennsylvania, traces its heritage back to the mid-1800s and the advent of the oil industry in western Pennsylvania. One of the first products pioneered there was petrolatum for use in medical salves and ointments from the utilization of materials previously considered to be unusable. The next major development came as a result of the first World War, when white oil from Europe was unavailable — the Petrolia facility became the first producer of white oil in the United States.

### **GLOBAL LEADERSHIP**

Over a century later, Sonneborn is now part of HF Sinclair, further reinforcing its commitment to developing the most innovative solutions. We utilize a state-of-the-art, two-stage hydrogenation process to pioneer innovations, such as low-volatility plastics oils, super white petrolatums and high-viscosity white oils. Sonneborn facilities in Amsterdam, Netherlands, also have a 100-year history of manufacturing and applications expertise. We also offer a globally available product line to efficiently serve the needs of our multinational customers. We are the only global producer with this breadth of production on two continents.

### **PRODUCT CHOICE**

The Sonneborn product line is the broadest in the industry. Our combination of standard grades satisfies a broad spectrum of applications. Our custom-formulating ability helps us meet your most exacting specifications. We provide grades that meet the strict standards of USP, NF, BP, DAB, French Codex, Ph. Eur., Japanese and other pharmacopoeias. We also provide products that conform to U.S. FDA classifications and are Vegan certified by the American Vegetarian Association.

### **BRINGING INNOVATIONS TO LIFE**

Sonneborn white mineral oils, petrolatums and microcrystalline waxes start with naturally occurring raw materials from the earth that are purified to their final state. We continue to innovate, developing newer and better products that exceed expectations, such as SonneNatural, a full line of unique and distinct 100 percent vegetable-based emollients to meet your formulating needs.



# WHITE MINERAL OILS

Sonneborn white oils are highly refined mineral oils that consist of saturated aliphatic and alicyclic nonpolar hydrocarbons. They are hydrophobic, colorless, tasteless, odorless, and do not change color over time. Sonneborn white oils are chemically and biologically stable, non-comedogenic, and do not support pathogenic bacterial growth. By choosing Sonneborn white oils, you'll also get a commitment to reliable supply and an unmatched level of service and solutions tailored to your specific needs.

## APPLICATIONS

White oils make an ideal blending base for personal care and pharmaceutical products. 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. The plastics industry uses our Hydrobrite™ line of low-volatility white oils in the production of polystyrene, polyolefins, thermoplastic elastomers and various other polymers to improve and control the melt flow rate of the finished polymer.

Sonneborn oils have proven themselves in food applications as wide-ranging as dough divider oils and dust suppression in grain silos. They lubricate food-handling equipment and control foam in beet sugar and vinegar production. And our low-pour-point naphthenic grades improve hot melt adhesives and lubricate air conditioner and refrigerator compressors.

## PRODUCTS

We supply USP, NF and technical white oil grades with the capability to work with you to custom manufacture products specific to your needs. USP and NF grades meet U.S. FDA 21 CFR 172.878 and 21 CFR 178.3620(a) regulations for direct food contact, and select grades of our white oils meet NSF H1, HX-1 and /or 3H food processing lubricant standards. These 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. Sonneborn NF Light Mineral Oil grades have lower viscosities, ranging from 4 cSt to 30 cSt, and pour points as low as -24°C.

## DID YOU KNOW?

Hydrobrite HV is a high-viscosity white mineral oil. The product is recommended in cosmetic applications and can also be used as a replacement for more costly high-molecular-weight components.

# WHITE MINERAL OILS

## TYPICAL PROPERTIES

### 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			
<b>USP MINERAL OIL</b>					
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)
<b>NF LIGHT MINERAL OIL</b>					
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 U.S. FDA 21 CFR 172.878 and 21 CFR 178.3620(a) requirements. All above grades meet the purity requirements of USP or NF. We can supply products meeting the current requirements of BP, DAB, French Codex, Ph. Eur., Japanese and other pharmacopoeias. Special viscosity and pour point oils are available on request.

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

### TYPICAL PROPERTIES OF STANDARD SONNEBORN TECHNICAL GRADE WHITE OILS

PRODUCT	VISCOSITY		SPECIFIC GRAVITY	POUR POINT	FLASH POINT
	ASTM D445 cSt @ 40°C	ASTM D2161 SUS @ 100°F			
<b>TECHNICAL GRADE</b>					
Semtol™ 500	100/125	580	0.860/0.880	-12 (10)	271 (520)
Semtol 400	70/90	380	0.855/0.880	-12 (10)	249 (480)
Semtol 350	65/70	350	0.869/0.885	-21 (-6)	221 (430)
Semtol 100	18/20	100	0.839/0.865	-21 (-6)	185 (365)
Semtol 85	14/17	85	0.839/0.862	-21 (-6)	185 (365)
Semtol 70	11/14	70	0.834/0.859	-24 (-11)	185 (365)
Semtol 50	7/10	55	0.814/0.862	-24 (-11)	154 (310)
Semtol 40	4/5	40	0.804/0.827	-3 (27)	135 (275)
LP-100	18/23	110	0.875/0.905	-37 (-35)	171 (340)
LP-201	39/45	200	0.875/0.895	-21 (-6)	171 (340)

All above grades are +25 Saybolt color and pass U.S. FDA 21 CFR 178.3620(b) for UV absorbance. Intermediate-viscosity oils are available on request.

# WHITE MINERAL OILS APPLICATIONS

## SONNEBORN WHITE MINERAL OIL TYPICAL APPLICATIONS

PERSONAL CARE / PHARMACEUTICAL												
	40 OIL	KAYDOL™	GLORIA™	PROTOL™	RUDEL™	ERVOL™	BENOL™	BLANDOL™	CARNATION™	KLEAROL™	HYDROBRITE™ 1000	HYDROBRITE™ HV
Laxatives/ Internal Lubricant		X										
Baby Oil								X	X			
Sun Tan Lotion	X							X	X			
Sun Tan Oil	X	X						X	X			
Cold Cream	X	X	X	X	X	X	X	X	X			X
Moisturizing Cream		X	X	X	X	X	X	X	X		X	X
Waterless Hand Cream	X	X	X					X	X	X		
Ethnic Hair Care Products	X	X				X	X	X	X	X	X	
Eye Makeup								X	X	X		
Lipsticks/Lip Balms								X	X	X	X	X
Makeup Removers	X							X	X	X		
Ointments/Creams	X	X	X					X	X		X	X
FOOD												
Baking Pan Oil								X	X		X	
Baking Divider Oil			X					X	X			
Protective Coating		X						X	X	X		X
Machinery Lubricant/Cleaner	X	X							X	X		
Release Agents			X					X	X			
AGRICULTURE												
Tobacco Processing	X							X	X	X		
Animal Feed	X							X	X	X		
Grain Elevator Dust Control	X							X	X	X		
ADHESIVES												
Hot Melt		X										X
Pressure Sensitive		X										
GENERAL INDUSTRIAL												
Furniture Polish	X								X	X		
Stainless Steel Cleaner									X	X		
Household Insecticides							X	X	X	X		
Textile Manufacturing									X	X		

# HYDROBRITE™ PLASTICS OILS

Hydrobrite plastics oils are a family of highly refined, low-volatility mineral oils that are designed specifically for the polymer industry and consist of saturated aliphatic and alicyclic nonpolar hydrocarbons. They are hydrophobic, colorless, tasteless, odorless, chemically inert, and have excellent UV stability.

## APPLICATIONS

Hydrobrite plastics oils are added to crystalline polystyrene (PS), high-impact polystyrene (HIPS), polyolefins, thermoplastic elastomers, and various other polymers to improve and control the melt flow rate of the finished polymer. Hydrobrite plastics oils are also employed as internal lubricants and/or external lubricants in PS, PVC, PP, PE, TPE, and numerous polymer formulations.

Other applications include: plasticizing agent, catalyst carrier, extender oil, mold release agent and pigment dispersing agent.

## TYPICAL PROPERTIES OF HYDROBRITE PLASTICS OILS

TYPICAL PROPERTIES	TEST METHOD	HYDROBRITE 550 PO	HYDROBRITE 380 PO	HYDROBRITE 200 PO
		LIMITS		
Specific Gravity @ 25°C/25°C	ASTM D4052	0.860/0.880	0.860/0.873	0.845/0.885
Kinematic Viscosity @ 40°C, cSt	ASTM D445	100/125	70/90	41.0/49.0
Acidity	USP (current revision)	PASS	PASS	PASS
Readily Carbonizable Substances	USP (current revision)	PASS	PASS	PASS
Solid Paraffin	USP (current revision)	PASS	PASS	PASS
Limit of Polycyclic Aromatic Hydrocarbons	USP (current revision)	PASS	PASS	PASS
Sulfur Compounds	USP (current revision)	PASS	PASS	PASS
Odor	LATM 092	NONE	NONE	NONE
Color, Saybolt	ASTM D156	30 Min.	30 Min.	30 Min.
GC Distillation, 5%, °C	ASTM D2887	430 Min.	415 Min.	380 Min.
Pour Point, °C (°F)	ASTM D97	-9 Max. (16)	-9 Max. (16)	-9 Max. (16)
Refractive Index @ 25°C	ASTM D1218	1.470/1.478	1.472/1.478	1.4685/1.4735
Flash Point, COC, °C	ASTM D92	254 Min.	250 Min.	—

Hydrobrite 200 PO, Hydrobrite 380 PO and Hydrobrite 550 PO are Mineral Oils meeting requirements for USP (current revision) and U.S. FDA requirements as per 21 CFR 178.878 and CFR 178.3620(a).

# HYDROBRITE™ PVC OIL

Hydrobrite PVC Oil is a highly refined liquid paraffin that consists of saturated aliphatic and alicyclic nonpolar hydrocarbons. This lubricant is hydrophobic, colorless, tasteless, odorless, chemically inert, and has excellent UV and color stability. The Hydrobrite PVC Oil technology is patented by the U.S. Patent Office.

## APPLICATIONS

Hydrobrite PVC Oil has been approved as a functional equivalent to paraffin wax in the PPI range formulations for high-pressure PVC water pipe at concentrations of 1 to 2 phr. Hydrobrite PVC Oil has been added to TR-2 (PPI PVC Range Composition Listing of Qualified Alternative Ingredients). This product also has NSF International approval. Hydrobrite PVC Oil serves as an excellent external lubricant for rigid PVC applications including pipe, siding, window profiles, fences and doors. As an external lubricant, the oil helps reduce friction between the polymer and metal surfaces.

## KEY FEATURES AND BENEFITS

- **Enhanced PVC compatibility:** Potential reduction in “plate out” and improved surface characteristics.
- **Liquid form:** More accurate metering/ease of handling. Will not agglomerate or “bridge” as wax tends to do.
- **Liquid form:** More uniform coating of PVC particles and improved productivity in high-intensity mixers.
- **Narrow molecular weight distribution:** More consistent than wax in PVC processing.
- **Liquid paraffin:** Hydrobrite PVC Oil will provide equivalent IZOD impact results, heat deflection temperature and weathering compared to paraffin wax.
- **Proven performance:** Over 20 years of successful commercial use in large- and small-diameter PVC pipe.
- **Food grade:** Safe for use in potable water pipe.

PROPERTIES GUARANTEED	TEST METHOD	LIMITS
Specific Gravity @ 25°C/25°C	ASTM D4052	0.860/0.880
Kinematic Viscosity @ 100°C, cSt	ASTM D445	10.0/14.0
Acidity	USP (current revision)	PASS
Readily Carbonizable Substances	USP (current revision)	PASS
Solid Paraffin	USP (current revision)	PASS
Limit of Polycyclic Aromatic Compounds	USP (current revision)	PASS
Sulfur Compounds	USP (current revision)	PASS
Odor	LATM 092	NONE
Color, Saybolt	ASTM D156	30 Min.
Refractive Index @ 25°C	ASTM D1218	1.470/1.478
Flash Point, COC, °C	ASTM D92	254 Min.

Hydrobrite PVC Oil is a Mineral Oil meeting requirements for USP (current revision) and U.S. FDA requirements as per 21 CFR 172.878 and 21 CFR 178.3620(a).





# PETROLATUMS

Our broad line of petrolatums are homogeneous mixtures of oily and waxy long-chain, nonpolar hydrocarbons. Their hydrating properties set a standard against which other moisturizers are compared. Odorless and tasteless, they range in color from white to yellow, and differ from one another in consistency and shear strength. When used at 30% or more, petrolatums are considered a skin protectant.

## APPLICATIONS

Personal care and pharmaceutical formulators often choose Sonneborn petrolatums as a formulation base. Petrolatums add lubricity and moisture resistance to lotions, creams, ointments and hand cleaners.

Sonneborn petrolatums meet U.S. FDA requirements and are Vegan certified. Food processors rely on them for uses that range from baking and candy-making to packaging.

In jar candles, the addition of petrolatum affects the crystallinity of the waxes to give a smoother, more pleasing appearance. In metal polishes and buffing compounds, petrolatums protect against moisture and corrosion.

## PRODUCTS

The Sonneborn line of standard and custom-compounded petrolatums is the broadest in the world. Sonneborn USP petrolatums meet U.S. FDA 21 CFR 172.880. Our medium-consistency Protopet™ grades are used in many fine cosmetics and ointments. Softer Fonoline™ grades are used in petroleum jellies and high-solids ointments.

Cumulus™ Ultra Pure is a high-purity pharmaceutical petrolatum that delivers low UV absorbance, which is an indication of low impurities; has a superb white color, and offers excellent stability. This high-purity petrolatum is ideal for use in a wide variety of pharmaceutical applications, including products for dry skin, skin conditions, baby skin care and makeup bases.

## DID YOU KNOW?

The Sonneborn line of petrolatums is the broadest in the world, offering a wide variety of solutions for your specific needs.

# PETROLATUMS

## TYPICAL PROPERTIES

### TYPICAL PROPERTIES OF STANDARD SONNEBORN PETROLATUMS

USP GRADES	MELTING POINT ASTM D127		CONSISTENCY ASTM D937	VISCOSITY @ 210°F ASTM D2161 (D445)	LOVIBOND COLOR IP 17
	°C	°F			
<b>PROTOPET™</b>					
Alba™	54/60	130/140	180/210	67 (12)	1.1 Y <sup>b</sup>
Super White	54/60	130/140	180/210	67 (12)	0.6 Y <sup>b</sup>
White 1S	54/60	130/140	180/210	67 (12)	1.5 Y <sup>a</sup>
White 2L	54/60	130/140	180/210	67 (12)	8Y 0.6R <sup>a</sup>
White 3C	54/60	130/140	180/210	67 (12)	12Y 1.2R <sup>a</sup>
Yellow 2A	54/60	130/140	180/215	67 (12)	30Y 2.5R <sup>a</sup>
<b>PROTOLINE™</b>					
White Protoline	52/60	125/140	170/200	40/50 (4/7)	1.0 Y <sup>b</sup>
<b>PERFECTA™</b>					
Perfecta	57/60	135/140	180/210	60 (10)	0.3 Y <sup>b</sup>
<b>FONOLINE™</b>					
Super White	50/56	122/133	195/230	60 (10)	0.5 Y <sup>b</sup>
White	53/58	127/137	210/245	65 (11)	1.7 Y <sup>a</sup>
Yellow	53/58	127/137	210/245	65 (11)	30Y 2.5R <sup>a</sup>
<b>CUMULUS™</b>					
Ultra Pure	52/59	126/138	135/165	65 (11)	0.5 Y <sup>b</sup>

a. 2" cell; b. 3" cell

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

### 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			
<b>SONO JELL</b>					
Sono Jell #4	42/44	107/112 <sup>d</sup>	90/125	38 (3.8)	0.5 Y <sup>b</sup>
Sono Jell #9	42/49	107/120 <sup>c</sup>	150/170	39 (4.1)	0.5 Y <sup>b</sup>
<b>MINERAL JELLIES</b>					
Mineral Jelly #10	40/46	105/115	290/350	40 (4.4)	1.0 Y <sup>a</sup>
Mineral Jelly #14	38/43	100/110 <sup>d</sup>	200/225	40 (4.4)	1.0 Y <sup>a</sup>
Mineral Jelly #17	32/38	90/100 <sup>e</sup>	340/400	40 (4.4)	1.0 Y <sup>a</sup>

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).

# PETROLATUMS APPLICATIONS

COSMETICS / PHARMACEUTICAL												
	PERFECTA™	SUPER WHITE PROTOPET™	SUPER WHITE FONOLINE™	WHITE PROTOPET™ 15	WHITE PROTOLINE™	WHITE FONOLINE™	YELLOW PROTOPET™ 2A	YELLOW FONOLINE™	MINERAL JELLIES	SONO JELL™	TROUGH GREASE	CUMULUS™ ULTRA PURE
Skin Creams & Lotions	X	X	X	X	X	X						
Petroleum Jelly			X		X	X						
Medicated Ointments	X	X	X						X	X		X
Body Wash		X		X								
Lip Balm		X	X	X		X						
Hair Care Products	X	X	X	X	X	X	X	X	X	X		
Sun Care Products	X	X	X	X		X		X	X	X		
Suppositories				X		X	X		X	X		
Dental Adhesive Formulations	X	X	X									
FOOD												
Confectionery Lubricants				X		X						
Meat Packing		X	X	X		X						
Mold Release Lubricants				X		X						
Release Agents		X	X	X		X						
Bakery Lubricants											X	
Food Handling Machinery Lubricants							X	X				
INDUSTRIAL												
Metal Polishes, Buffing Compounds							X	X				
Modeling Clay				X		X	X	X				
Printing Ink				X		X						
Wire Rope Lubricant							X	X				
Soldering Pastes							X	X				
Crayons				X								
Candles		X		X								
Rust Preventatives							X	X				
POLYMERS												
Catalyst Carrier				X		X						
Extrusion Aid				X		X						
Plasticizer				X		X						
Transfer Molding				X		X						



# MULTIWAX™ MICROCRYSTALLINE WAXES

Microcrystalline waxes consist of odorless, tasteless, nonpolar hydrocarbons with relatively high melting points. Sonneborn Multiwax grades vary in color from white to yellow and vary in physical properties such as hardness and melting point.

## APPLICATIONS

Sonneborn Multiwax products are used in a broad range of applications.

Sonneborn waxes act as bases for chewing gum, and as cold-flexible coatings for cheese wheels. They are natural bases excellent for lipstick, cold creams and ointments. These products can harden, lubricate, carry pigments and medication, and protect against moisture.

These U.S. FDA-compliant Multiwax products play an important role in food packaging applications such as wax-impregnated paper, film, foil and corrugated board to protect foods. Sonneborn Multiwax products help hot melt adhesives flow readily and form flexible bonds.

Many of the wax products we use daily, from crayons, candles and caulk to sealants and fine wood polishes, rely on Sonneborn Multiwax.

Sonneborn microcrystalline waxes act as carriers for compounds that prevent corrosion in a wide range of industries.

## PRODUCTS

We are one of the world's largest producers of microcrystalline waxes and one of the world's most dependable suppliers. We offer the perfect combination of innovative solutions and experts who are committed to your success. Sonneborn waxes can also be shipped as bulk liquids, or as slabs in cartons or pallets.

Sonneborn standard Multiwax grades all meet U.S. FDA CFR 172.886 requirements for food-grade petroleum waxes. A variety of technical grades are also available. This product line offers you the world's widest choice of white microcrystalline waxes.

The hardness of our standard waxes ranges from 15 to 80 dmm on the ASTM D1321 needle penetration test. We customize physical properties to meet customer specifications.

## DID YOU KNOW?

The Sonneborn Multiwax product line is recognized worldwide as the quality standard for the whitest, most consistent grades of microcrystalline wax available.

# MULTIWAX MICROCRYSTALLINE WAXES

## TYPICAL PROPERTIES & APPLICATIONS

### 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	ASTM D2161 SUS	ASTM D445 cSt	Visual	Test Method	Limits	°F (°C)
180-W	175/188	79/87	15 / 25	75 Min.	14.3 Min.	White	ASTM D156	+16 Min.	530 (277) Min.
180-M	175/188	79/87	15 / 22	75 Min.	14.3 Min.	Light Yellow	ASTM D1500	2.0 Max.	530 (277) Min.
ML-445	170/180	77/82	25 / 35	75 / 90	14.3 / 18.0	Light Yellow	ASTM D1500	2.0 Max.	530 (277) Min.
W-445	170/180	77/82	25 / 35	75 / 90	14.3 / 18.0	White	ASTM D156	+16 Min.	530 (277) Min.
7545	170/185	77/85	35 / 70	75 / 100	14.3 / 20.4	White	ASTM D156	+16 Min.	500 (260) Min.
W-835	165/175	74/79	60 / 80	75 / 90	14.3 / 18.0	White	ASTM D156	+16 Min.	475 (246) Min.

The above waxes meet the requirements for Microcrystalline Wax NF as per the National Formulary (current revision) and comply with the requirements of U.S. FDA 21 CFR 172.886 for food grade petroleum waxes. Color: 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	W - 835
Candles	X			X	X
Chewing Gum	X	X	X	X	X
Cosmetics	X		X	X	X
Crayons			X	X	X
Dental Products			X	X	X
Electrical Grades	X	X	X	X	X
Hot Melt Adhesives	X	X	X	X	X
Laminating Grades			X	X	X
Lubricating Grades			X	X	X
Modifying Grades	X	X	X	X	X
Paste-up Grades			X	X	X
Pharmaceutical Grades	X	X	X	X	X
Rustproofing Grades	X	X	X	X	X
Sculpture Grades			X	X	X
Sealant Grades			X	X	X



## PETROLEUM DISTILLATES

Petroleum distillates are high-purity solvents with high flash points. Sonneborn petroleum distillates are made by fractionating each grade to a narrow boiling range, then catalytically hydrotreating to remove aromatic and other unsaturated hydrocarbons. The resulting distillate resembles a very light white oil. Like white oils, petroleum distillates are hydrophobic, colorless, tasteless, virtually odorless and color fast. Chemically and biologically stable, they are non-comedogenic and do not support pathogenic bacterial growth.

### APPLICATIONS

Petroleum distillates can serve as substitutes for high-VOC solvents in consumer and institutional products. They lower the VOCs in such aerosol systems as air fresheners, furniture polishes and insecticides. Non-aerosol uses include waterless hand soaps, floor polishes, nail polish removers, charcoal lighter fluids, liquid candles and torches. Petroleum distillates also have many industrial uses. Applications include defoaming agents, metal to sheet rolling and quench oils, vegetable froth flotation, dust control agents, and the manufacture of paper and board.

### PRODUCTS

We sell two petroleum distillate grades. PD-23 is our lightest product. It has excellent solvency and a flash point of 230°F (ASTM D92). The flash point of PD-28 is still higher at 270°F. The two grades are not classified as combustible under

DOT regulations. The International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and OSHA do not list them as carcinogenic. PD-28 complies with U.S. FDA 21 CFR 172.878, as well as 21 CFR 178.3620(a) regulations for direct food contact.

### DID YOU KNOW?

Sonneborn petroleum distillates meet the low vapor pressure volatile organic compounds (LVP-VOC) exemption criteria under the California Air Resources Board (CARB) Method 310. As such, Sonneborn petroleum distillates may be considered non-reportable VOCs in calculations of the VOC contents of regulated consumer product categories in the California Consumer Product Regulations.

# PETROLEUM DISTILLATES

## TYPICAL PROPERTIES & APPLICATIONS

### TYPICAL PROPERTIES OF PD-23 AND PD-28

PROPERTY	TEST METHOD	PD-23	PD-28
Specific Gravity 60°F / 60°F	ASTM D4052	0.800	0.823
Flash Point, COC, °C	ASTM D92	110	132
Viscosity SUS @ 100°F	ASTM D2161	34	39
Viscosity cSt @ 40°C	ASTM D445	2.6	4.2
Color, Saybolt	ASTM D156	+30	+30
KB Value	ASTM D1123	25	22
Refractive Index @ 77°F	ASTM D1218	1.442	1.453
Pour Point, °C (°F)	ASTM D97	-6 (21)	0 (32)
Distillation Range, °F	ASTM D2887	—	—
IBP	—	401	454
5%	—	432	507
50%	—	485	581
95%	—	532	654
FBP	—	572	692

### PETROLEUM DISTILLATE APPLICATIONS

	PD-23	PD-28
<b>COSMETICS / PHARMACEUTICAL</b>		
Lotions		X
Creams		X
<b>HOUSEHOLD PRODUCTS</b>		
Adhesives		X
Automobile Wax / Polish Formulations	X	X
Furniture Polishes	X	X
Household Cleaners	X	X
Insecticide Carriers	X	X
Liquid Candles	X	X
Metal Cleaners / Polishes	X	X
Waterless Hand Cleaners	X	X
<b>INDUSTRIAL</b>		
Dust Control	X	X
Fertilizers	X	X
Powders	X	X
Aluminum Foil Rolling Oil		X
Carbonless Copy Paper	X	
Froth Flotation of Vegetables	X	X
Defoamers	X	X
Fiber Lubricants		X
Processing of Paper and Board	X	X
Water Treatment	X	X
Cleaning Solvents	X	X

# COMMITTED TO EXCELLENCE

Every Sonneborn product is backed by a dedication to innovation and the technical expertise that helps you accomplish your goals. Sonneborn products are used widely by the personal care, polymer manufacturing and food processing industries and are manufactured for use in a variety of specialty applications.



## SONO JELL CANDLE BASE

Sono Jell Candle Base products are ultra-purified to ensure the perfect color, appearance and performance of top-quality candles. These custom wax blends are white and odorless and offer excellent compatibility with soy and other waxes. Sono Jell Candle Base products deliver outstanding thermal, UV and color stability due to our unique high-pressure hydrogenation process. They are easy to formulate with paraffin, natural and synthetic waxes. And with enhanced crystal modification, these products prevent or minimize common surface imperfections observed in paraffin wax or soy wax candles, such as polymorphism or fat bloom.



## SONNENATURAL

SonneNatural brand products are your best choice for 100% plant-based emollients. As the global leading supplier of the highest-quality petrolatum, we utilize our expertise in petrolatum development, hydrocarbon formulating and manufacturing to make the finest range of natural alternatives imaginable. In skin care, SonneNatural is an excellent moisturizer. 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 combability, defrizzing and provides luster plus shine. In color cosmetics, specifically for anhydrous formulations, SonneNatural offers solubilizing, emolliency and color dispersion properties.





### **REFRIGERATION OILS**

Suniso™ refrigeration oils are specifically designed to lubricate refrigeration and air conditioning compressors. They are carefully refined from petroleum lubricating oil stocks. Suniso oils have the following characteristics, which ensure maximum trouble-free service life: excellent chemical and thermal stability, low wax content, low pour point, high dielectric strength, proper viscosity, and absence of contamination.

### **COMPRESSOR LUBRICANTS**

Sonolube™ lubricants are designed for high-pressure polyethylene reciprocating compressors in LDPE production. They are formulated based on high-quality white mineral oils. Sonolube lubricants bring new and improved solutions to the problems of extending equipment life and energy efficiency. Life of critical compressor components (e.g., piston rings and packings) is extended with a corresponding reduction in maintenance costs and increased productivity. Reduction in energy losses due to friction results in improved energy efficiency.

### **AGRICULTURAL OILS**

Sonneborn Agrol™ products are designed to provide the versatility needed for numerous agricultural and horticultural applications. These products are listed with the EPA as inert ingredients by brand name, making your registration process smoother.

### **ALKANES**

Sonneborn alkane products offer the versatility, compatibility and safety required in formulating high-performing personal care products, from skin and hair care to antiperspirants and suncare products. These products offer distinct advantages, including protective barrier properties and an excellent delivery system for other key ingredients. They are available globally and deliver peace of mind with favorable skin and ocular undiluted test results. Sonneborn alkane products are clean, odorless, inert, microbial resistant, environmentally friendly, and UV and thermally stable.

You need the freedom  
to innovate. **Sonneborn**  
**will make it real.**

# PRINCIPAL LOCATIONS

## North America

### Manufacturing

Sonneborn LLC  
100 Sonneborn Lane  
Petrolia, PA 16050

**USA Phone:** 724.756.2210

**Fax:** 877.948.2686

## Latin America and Caribbean

### Sonneborn Brasil LTDA.

Pref. Luis Latorre, 5.300 A113B2  
13209-430 Jundiá, SP, Brasil

**Phone:** 55.11.3013.2729

## Europe, Africa and Middle East

### Sonneborn Refined Products B.V.

Mainhavenweg 6  
1043 AL Amsterdam  
The Netherlands

**Phone:** 31.20.611.7475

**Fax:** 31.20.611.1170

### Wax Manufacturing Plant

Wezelstraat 12  
1541 LZ Koog aan de Zaan  
The Netherlands

**Phone:** 31.75.628.3854

**Fax:** 31.75.621.0811

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# CUSTOMER SERVICE

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**[sonneborn.com](https://sonneborn.com)**

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LUB4149E (2023.04)