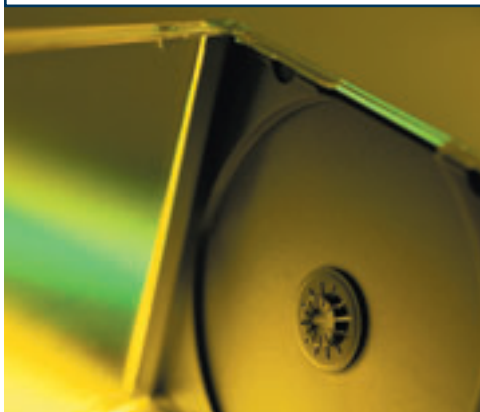


# sonneborn

REFINED PRODUCTS

**WHITE OILS**



**PETROLATUMS**



**FIND REFINED SOLUTIONS**

**MICROCRYSTALLINE WAXES**

**CHEMISTRY. BY NATURE.™**

## **SONNEBORN REFINED PRODUCTS**



**SONNEBORN, REBORN.** Since the early 1900s the Sonneborn name has been synonymous with the highest quality refined hydrocarbons in the world. While through the years our name has changed - most recently having been the Witco Refined Products business of Sonneborn Corporation - one thing has remained consistent: our goal of providing customers with premium products, superior technical capabilities, and dependable service.

**HISTORY.** Sonneborn Refined Products can trace its manufacturing heritage back more than 100 years. Our manufacturing sites in Amsterdam, Haarlem and Koog aan de Zaan (The Netherlands) and Petrolia, Pennsylvania (USA) have a successful track record of manufacturing, and marketing highly purified white oils, petrolatums, and microcrystalline waxes. Along the way we pioneered innovations such as Sonneborn Compressor Lubricants, low-volatility Plastics Oils, Super White Petrolatums, and specialty food grade Wax Blends. Sonneborn now has all of its plants accredited to quality standards ISO 9002 or ISO 9000:2000.

**GLOBAL LEADERSHIP.** Over a century later, Sonneborn Refined Products is the global leader in the manufacture and supply of high-purity specialty hydrocarbons. Most of the world's largest personal care, polymer manufacturing, and food processing companies rely on us. We offer a similar product range from Europe as from North America, which enables us to efficiently serve the needs of our multinational customers. Sonneborn Refined Products is the world's only producer that offers this global reach and depth of experience.

**PRODUCT CHOICE.** Sonneborn Refined Products has the broadest product line in the industry. Our combination of standard grades satisfies a broad spectrum of applications, and our custom-formulating ability helps us meet your most exacting specifications. We provide grades that meet the strict standards of the European (EuP), United States (USP) and Japanese Pharmacopoeia (JP). Compliance with former European monographs of the BP, DAB and French Codex can be provided on request. We also provide products that conform to USDA, NF and FDA classifications.

**CHEMISTRY. BY NATURE.** Just what is natural? We believe that there is nothing more natural than white mineral oils, petrolatums and microcrystalline waxes. We start with raw materials that naturally occur in the earth, and purify them to their final state. Our products have been soothing people since they were babies, and we continue to build on our innovation to develop new and better products that have a natural fit in today's world.



## WHITE OILS

**PRODUCT DESCRIPTION.** 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. Our white oils are chemically and biologically stable, non-comedogenic, and do not support pathogenic bacterial growth. These properties make white oils the standard in many industries.

**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 pharmaceutical grade white oils in products ranging from baby oils and lotions to sunscreens, tissues, and antibiotics.

The plastics industry uses our 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.

Our oils have proven themselves in food applications as wide-ranging as dough divider oils to dust suppression in grain silos. They lubricate food-handling equipment, impregnate wrapping paper to keep foods crisp, control foam in beet sugar and vinegar production, and enhance the leather tanning process. And our low pour-point naphthenic grades improve hot melt adhesives and lubricate air conditioner and refrigerator compressors.

**PRODUCTS.** Sonneborn supplies pharmaceutical and technical white oil grades and will custom-blend to meet customer specifications. Our white oils, (light) liquid paraffins, meet the purity requirements of the European (EuP), United States (USP) and Japanese Pharmacopoeia (JP). Moreover they are in compliance with the purity requirements of former monographs of the BP, DAB or French Codex. In addition our white oils meet FDA 21 CFR 172.878 and 21 CFR 178.3620(a) regulations for direct food contact, and USDA H1 food processing lubricant standards. Our white mineral oil grades have viscosities that range from 3 cSt to 240 cSt, and pour points as low as -21°C for our naphthenic grades.

**DID YOU KNOW?** Hydrobrite® 1000 is the highest viscosity USP white mineral oil available in the world. The product provides all the benefits of petrolatum but in a liquid form, and is recommended in cosmetic applications where emolliency and skin protection are required. It can also be used as a replacement for more costly high-molecular weight liquids.

## WHITE OILS: TYPICAL PROPERTIES



### TYPICAL PROPERTIES OF STANDARD PHARMACEUTICAL GRADE WHITE OILS

Product	Density	Viscosity	Viscosity	Pour	Flash	Viscosity
	kg/m <sup>3</sup> @ 20 °C	cSt @ 40 °C	cSt @ 100 °C	Point °C	Point °C	SUS @ 37.8 °C
	ASTM D-1298	ASTM D-445	ASTM D-445	ASTM D-97	ASTM D-92	ASTM D-445
Hydrobrite® 1000	870 - 890	180 - 240	19 - 22	-6	290	1000
Kaydol®	870 - 890	63 - 70	7 - 9	-18	210	350
Parol™	850 - 880	63 - 70	8.5 - 10	-6	220	360
Dosetol™	865 - 885	52 - 57	6 - 8	-15	200	283
Protol®	850 - 880	34 - 39	4 - 6	-12	180	185
Rudol®	845 - 875	28 - 34	4 - 6	-12	180	160
Blandol®	830 - 855	13 - 18	2 - 4	-9	175	85
Carnation®	825 - 850	10 - 14	2 - 4	-9	165	70
Medinol™	840 - 860	12 - 17	2 - 4	-18	150	88
Klearol®	820 - 840	7 - 10	-	+3	140	50
Lytol™	810 - 830	3 - 5	-	+3	115	40

All above grades have no odor or taste and are water white (Saybolt colour +30), and meet FDA 21 CFR 172.878 and 21 CFR 178.3620(a) requirements. They meet the purity requirements of the European (EuP), United States (USP) and Japanese Pharmacopoeia (JP). Moreover they are in compliance with the purity requirements of former monographs of the BP, DAB or French Codex. Special viscosity and pour point oils are available on request.

### TYPICAL PROPERTIES OF STANDARD TECHNICAL GRADES

Product	Density	Viscosity	Viscosity	Pour	Flash	Viscosity
	kg/m <sup>3</sup> @ 20 °C	cSt @ 40 °C	cSt @ 100 °C	Point °C	Point °C	SUS @ 37.8 °C
	ASTM D-1298	ASTM D-445	ASTM D-445	ASTM D-97	ASTM D-92	ASTM D-445
Technical Oil TO 100	850 - 870	18 - 23	-	-15	185	105
Semtol 70/28	825 - 850	10 - 14	-	-6	165	70

Of the above grades Technical Oil TO 100 passes FDA 21 CFR 178.3620(c) for UV absorbance. Semtol 70/28 passes FDA 21 CFR 178.3620(b). Intermediate viscosity oils are available on request.

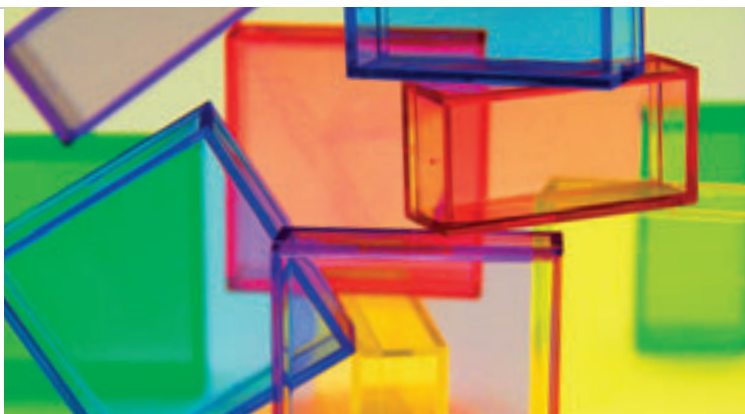


# WHITE OILS: APPLICATIONS

## WHITE OIL APPLICATIONS

	Hydrobrite® 1000	Kaydol®	Parol™	Dosetol™	Protol®	Rudol®	Blandol®	Carnation®	Medinol	Klearol®	Lytol™
<b>PERSONAL CARE/ PHARMACEUTICAL</b>											
Baby Oil							■	■			
Sun Tan Lotion							■	■			
Sun Tan Oil		■					■	■			
Cold Cream		■	■	■	■	■	■	■	■		
Moisturizing Cream	■	■	■	■	■	■	■	■	■		
Waterless Hand Cream		■	■	■	■	■	■	■	■	■	■
Ethnic Hair Care Products	■	■	■	■		■	■	■	■		
Eye Make-Up							■	■		■	■
Lipsticks/Lip Balms	■		■								
Make-Up Removers							■	■		■	■
Laxatives/Internal Lubricant		■	■			■	■	■			
Ointments/Creams	■	■	■	■		■	■	■	■		
<b>BAKING</b>											
Pan Oil	■		■				■	■			
Divider Oil			■				■				
<b>FOOD</b>											
Protective Coating			■			■	■	■			
Machinery Lubricant/Cleaner			■			■	■	■		■	■
<b>AGRICULTURE</b>											
Tobacco Processing			■				■	■			
Animal Feed							■	■		■	
Grain Elevator Dust Control							■	■		■	
<b>Adhesives</b>											
Hot Melt	■	■							■		
Pressure Sensitive	■	■							■		
<b>GENERAL INDUSTRIAL</b>											
Furniture Polish							■	■		■	
Stainless Steel Cleaner							■	■		■	■
Household Insecticides										■	
Textile Manufacturing							■	■		■	

## PLASTICS OILS



**PRODUCT DESCRIPTION.** Plastics oils are highly refined, low-volatility mineral oils that consist of saturated aliphatic and alicyclic nonpolar hydrocarbons. They are hydrophobic, colourless, tasteless, odourless, chemically inert, and have excellent UV stability.

**APPLICATIONS.** Sonneborn 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. 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 PLASTICS OILS

PROPERTIES GUARANTEED	TEST METHOD	HYDROBRITE® 380 EU	PLASTIC OIL 330
Density @ 20°C, kg/m <sup>3</sup>	ASTM D-1298	850 - 880	850 - 880
Kinematic Viscosity @ 40°C, cSt	ASTM D-445	66 - 75	66 - 75
Carbonizable Substances	Eur. Pharm.	PASS	PASS
Color, saybolt	ASTM D-156	+30 Min.	+30 Min.
Distillation, 5%, °C @ 10 mmHg	ASTM D-1160	—	278 Min.
Pour Point, °C	ASTM D-97	-9 Max.	-9 Max.
Paraffinic Carbon, %	ASTM D-3238	65 - 75	65 - 75
Naphthenic Carbon, %	ASTM D-3238	35 - 25	35 - 25
Flash Point, COC, °C	ASTM D-92	220 Min.	220 Min.

Hydrobrite® 380 EU and Plastic Oil 330 are Mineral Oils meeting requirements of the European (EuP), United States (USP) and Japanese Pharmacopoeia (JP). Moreover they are in compliance with the purity requirements of former monographs of the BP, DAB or French Codex, FDA requirements as per 21 CFR 178.878 and CFR 178.3620(a) and requirements according to the European Directive for plastic materials intended to come into contact with foodstuffs.





## COMPRESSOR LUBRICANTS

**PRODUCT DESCRIPTION.** Compressor Lubricants are a family of high performance lubricants that consist of white mineral oil, viscosity improvers and lubricity packages. The oils are designed to lubricate under extreme conditions of pressure, temperature and in the presence of supercritical ethylene gas.

**APPLICATIONS.** Compressor Lubricants are applied in primary, booster, and hyper compressors in LDPE plants world wide. Since their original development, Sonneborn Refined Products have successfully introduced four new generations of compressor lubricants. Each successive generation combining proven technology with the benefits of the latest developments.

### KEY FEATURES AND BENEFITS:

- **Proven performance:** Used for decades in virtually every possible compressor configuration, our compressor lubricant's high performance enables extremely long life times of packing sets.
- **Suitable for any product grade:** Sonneborn Compressor Lubricants are designed not to affect any properties of the plastic end-product. Therefore they can be used in production of all co-polymers, food and pharmaceutical grades, wire and cable, coatings and printable plastic.
- **Food grade:** In order to comply with the highest standards, Sonneborn Compressor Lubricants meet the requirements of the European Directive for plastic materials intended to come into contact with foodstuffs.

1 <sup>st</sup> Generation	2 <sup>nd</sup> Generation	3 <sup>rd</sup> Generation	4 <sup>th</sup> Generation
Consists mainly of compounded white oils providing hydrodynamic lubrication.	Incorporation of lubricity additives to provide boundary lubrication.	Formulated with enhanced additive package providing dramatic improvement in lubrication including extreme pressure situations. 100% improvement in coefficient of friction versus II generation.	Utilizing the patented Sonolube technology we have formulated a new generation compressor lube that demonstrates excellent viscosity pressure characteristics.
Example product: <b>CL 600 PL</b>	Example product: <b>CL 600 PHLA 3</b>	Example product: <b>Sonolube M-600</b>	Example product: <b>Sonolube HP 400</b>

Sonneborn Compressor Lubricants meet the requirements of the European Directive for plastic materials intended to come into contact with foodstuffs.

## PETROLATUMS



**PRODUCT DESCRIPTION.** 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.

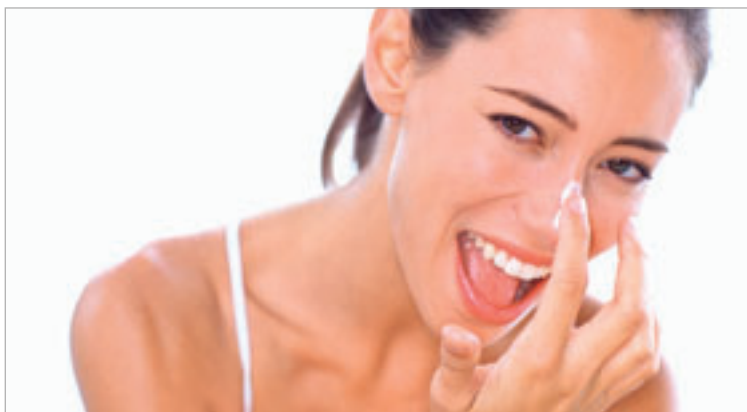
**APPLICATIONS.** Personal care and pharmaceutical formulators often choose Sonneborn petrolatums as a formulation base. Petrolatums add lubricity and moisture resistance to lotions, creams, ointments, and hand cleaners. Sonneborn petrolatums meet FDA requirements. Food processors rely on them for uses 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.** Sonneborn carries the world's broadest line of standard and custom-compounded petrolatums and related products. All our pharmaceutical grades meet the requirements of the white and yellow soft paraffin monographs of the European Pharmacopoeia. Moreover they are available to comply with the purity requirements of former monographs of the BP, DAB or French Codex.

**DID YOU KNOW?** Sonneborn petrolatums are renowned in the personal care and cosmetic industries for their contribution to the formation of stable and consistent end products.





## PETROLATUMS: TYPICAL PROPERTIES

### TYPICAL PROPERTIES OF STANDARD PHARMACEUTICAL GRADE PETROLATUMS

Product	Drop Melting	Drop	Congeaing	Cone Penetration	Lovibond	Purity			
	Point °C ASTM D-127	Point °C acc. EuP	Point °C ASTM D-938	mm x 0.1 @ 25°C ASTM D-937	Colour 2" Cell (* = 1/2" Cell)	BP USP EuP	FDA	DAB	FC
<b>WHITE</b>									
Snowwhite P1™	58 - 64	51	48 - 54	180 - 200	0.5 Y Max.	■	■	■	■
Protopet® White 1 SH	58 - 64	51	47 - 53	180 - 210	1.0 Y Max.	■	■	■	■
Fonline® White H	50 - 56	46	45 - 51	210 - 245	1.0 Y Max.	■	■	■	
Snowwhite N™	54 - 60	50	47 - 53	160 - 180	1.5 Y Max.	■			
Snowwhite MD™	55 - 61	53	48 - 54	160 - 180	1.0 Y Max.	■	■	■	
Snowwhite T5™	60 - 66	53	50 - 56	160 - 180	1.5 Y Max.	■			
Snowwhite Special™	53 - 59	52	47 - 53	160 - 180	1.0 Y Max.	■			
Snowwhite A4™	53 - 59	52	47 - 53	160 - 180	1.0 Y Max.	■	■	■	
Snowwhite EC™	58 - 66	52	49 - 56	160 - 180	2.0 Y Max.	■			
<b>YELLOW</b>									
Blond™	58 - 65	51	50 - 56	160 - 180	15 Y + 1.5 R*	■			
Yellow Super™	58 - 65	53	50 - 56	160 - 180	5.0 Y + 0.5 R*	■			
Extra Light Yellow™	58 - 65	51	49 - 55	160 - 180	15 Y + 1.5 R*	■			

### TYPICAL PROPERTIES OF STANDARD TECHNICAL GRADE PETROLATUMS

Product	Drop Melting	Congeaing	Cone Penetration	Colour
	Point °C ASTM D-127	Point °C ASTM D-938	mm x 0.1 @ 25°C ASTM D-937	
Yellow Technical Petrolatum I	55 - 65	48 - 56	160 - 180	yellow/brown
Amber Technical II	70 - 80	62 - 72	90 - 115	yellow/brown
Petrolatum 68	69 - 79	61 - 69	70 - 90	brown
Petrolatum 640/20	35 - 45	35 - 43	175 - 195	brown

# PETROLATUMS: APPLICATIONS



## PETROLATUM APPLICATIONS

	White Pharmaceutical Grades	Yellow Pharmaceutical Grades	Technical Grades
<b>COSMETICS/ PHARMACEUTICAL</b>			
Skin Creams and Lotions	■	■	
Dental Adhesive Formulations	■		
Hair Dressing Creams	■	■	
Lip Balm	■		
Medicated Ointments	■		
Moisturizing Lotions	■	■	
Permanent Waves	■	■	
Petroleum Jelly	■		
Sun Care Products	■	■	
Suppositories	■	■	
Hand Cleaners	■	■	
<b>FOOD</b>			
Confectionery Lubricants	■	■	
Meat Packing	■	■	
Mold Release Lubricants	■	■	
Release Agents	■	■	
Bakery Lubricants	■		
Food Handling Machinery Lubricants	■	■	
<b>INDUSTRIAL</b>			
Metal Polishes, Buffing Compounds	■	■	
Modeling Clay	■	■	■
Printing Ink		■	■
Toilet Bowl Rings			■
Wire Rope Lubricant		■	■
Soldering Pastes	■	■	■
Crayons	■	■	
Candles	■	■	
Rust Preventatives	■	■	■
<b>POLYMERS</b>			
Catalyst Carrier	■	■	■
Extrusion Aid	■	■	■
Plasticizer	■	■	■
Transfer Molding	■	■	■



## MICROCRYSTALLINE WAXES

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

**APPLICATIONS.** Sonneborn has a broad product line of microcrystalline waxes. Our waxes act as bases for chewing gum, and as cold-flexible coatings for cheese wheels. They are natural bases in lipstick, cold creams, and ointments, where they harden, lubricate, carry pigments and medication, and protect against moisture.

Multiwax plays an important role in food packaging. Wax-impregnated paper, film, foil, and corrugated board protect foods from moisture. Multiwax helps 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, start with Sonneborn Multiwax. Our microcrystalline waxes act as carriers for compounds that prevent rust in a wide range of industries.

**PRODUCTS.** Sonneborn is one of the world's largest producers of microcrystalline waxes. With dedicated wax manufacturing lines we rank among the most dependable suppliers. We ship waxes as bulk liquids, as well as in slabs or pallets.

Sonneborn's standard Multiwax grades all meet FDA CFR 172.886 and 178.3710 requirements for food-grade petroleum waxes as well as requirements of the hard paraffin monograph of the European Pharmacopoeia. In addition they meet the requirements of the European Directive for plastic materials intended to come into contact with foodstuffs and comply with recommendations of Colipa. We also provide a variety of technical grades.

# MICROCRYSTALLINE WAXES: TYPICAL PROPERTIES & APPLICATIONS



## MICROCRYSTALLINE WAX SPECIFICATIONS

Product	Melting Point °C	Congeaing Point °C	Needle Penetration mm x 0.1 @ 25°C	Viscosity mm <sup>2</sup> /s @ 100 °C	Colour
	ASTM D-127	ASTM D-938	ASTM D-1321	ASTM D-445	ASTM D-1500
Multiwax 180 M-H	82 - 87	74 - 79	15 - 20	13 - 18	2.0 max.
Witcotack 143	81 - 86	73 - 79	17 - 22	13 - 18	2.0 max.
Multiwax ML 445-H	79 - 84	71 - 76	25 - 32	13 - 18	2.0 max.
Witcovar 146	78 - 83	69 - 74	37 - 42	13 - 18	2.0 max.

All above grades of Multiwax comply with FDA requirements CFR 172.886 and 178.3710 as well as the hard paraffin monograph of the European Pharmacopoeia. In addition they meet the requirements of the European Directive for plastic materials intended to come into contact with foodstuffs and comply with recommendations of Colipa. Many of the above grades are available on special order in colours other than those listed above.

## MULTIWAX® MICROCRYSTALLINE APPLICATIONS

	180 M-H	ML 445-H	Witcovar 146	Witcotack 143
Candles	■	■	■	■
Chewing Gum	■	■		■
Cosmetics		■	■	
Lipcare		■	■	
Crayons		■	■	
Dental Products		■	■	
Electrical Grades	■	■		■
Hot Melt Adhesives	■	■		■
Ink Grades		■	■	
Laminating Grades		■	■	
Lubricating Grades		■	■	
Modifying Grades	■	■		■
Pharmaceutical Grades	■	■	■	■
Rustproofing Grades	■	■	■	■
Sculpture Grades		■	■	
Sealant Grades		■	■	



# WAX BLENDS

**PRODUCT DESCRIPTION.** Wax Blends are high-tech formulations of paraffins, microcrystalline waxes and additives. A significant proportion of these raw materials are produced in-house by Sonneborn Refined Products. Our experience and depth of knowledge enables us to engineer the most advanced Wax Blends in the world.

**APPLICATIONS.** Wax Blends are used in very divers markets, such as diary, food, packaging, cosmetics, plastics, printing and metal-industry.

**KEY FEATURES AND BENEFITS:**

- Tailor made wax blends that are designed to meet the needs of your specific application or process.
- Our comprehensive technical support will provide quick and flexible response to specific customer requirements.
- Our Wax Blends are key ingredients in a wide range of food, industrial and other manufacturing processes.
- Wax Blends are available as liquid bulk, in slabs or pellets.

**Industries**

Food	Packaging	Cosmetics	Specialties
Cheesewax Chewing gum Poultry wax	Laminating wax Coating wax Hotmelt	Paraffinic and Microcrystalline wax blends	Ink wax Anti corrosion wax Anti ozone wax

**Product examples**

A wide variety of cheese waxes in various colors are tailor made for your cheeses and machines equipment.	Wax designed for specific converting equipment and application techniques.	Wax as a component of ointments, pastes, creams or lipsticks.	Anti-sunchecking wax designed to inhibit cracking of rubber products, which are statically exposed to atmospheric ozone.
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Wax blends comply with regulations for their specific application.



## TELEPHONE CABLE COMPOUNDS

**PRODUCT DESCRIPTION.** Telephone Cable Compounds are homogeneous mixtures of carefully selected and highly refined hydrocarbons. They are petrolatum based with added elastomers and polymers to obtain their unique characteristics. Our product range offers a wide choice of dropping points combined with excellent electrical properties.

**APPLICATIONS.** Telephone Cable Compounds are used for the filling of the interstices in polyethylene insulated and sheathed telephone cables. Their function is to prevent the penetration of moisture into the cable in the event of damage to the cable sleeve.

Our Telephone Cable Compounds have been developed to meet the specific requirements of cable manufacturers and international regulating authorities. The wide range of products allows our customers to select a product for each specification.

### PRODUCTS

#### TELEPHONE CABLE COMPOUND TCV 70

Meets the requirements of European post offices and other authorities like BPO, Bundespost, NF and others. The relative soft structure of this compound makes it very suitable for cold filling techniques. The minimum dropping point is 73 °C.

#### TELEPHONE CABLE COMPOUND TCV 75

Comparable with the TCV 70 however with a dropping point of min. 80 °C. This renders the possibility to use this compound in cables for subtropical regions. As this compound also meets the requirements of the European post offices and authorities it is a very versatile filling compound. It can easily be filled into cables in semi-solid state at temperatures of 30-40 °C below its dropping point and in liquid state around its melting point.

#### TELEPHONE CABLE COMPOUND TCV 85 R AND 98 R

These cable compounds have been especially developed for use in cables destined for tropical regions. They meet the REA specifications including the simulated flow test and have high dropping points in combination with excellent electrical properties.





## TELEPHONE CABLE COMPOUNDS

### TELEPHONE CABLE COMPOUND TCV 482/1

A high quality REA grade comprising selected elastomers and polymers, applicable for both flooding and filling applications.

### WITCOGEL IV

This ETPR (Extended Thermo Plastic Rubber) filling compound is not greasy to touch, easily strippable and can easily be handled and processed by the cable manufacturers without modification of the existing filling equipment. It meets the REA specifications including the simulated flow test.

### FLOODING COMPOUND FC 57 M

Flooding Compounds are applied within the protective layers in a cable. The FC 57 M is an universal compound that is relatively soft and that can be applied at ambient temperatures.

#### TYPICAL PROPERTIES OF STANDARD TELEPHONE CABLE COMPOUNDS

Product	Viscosity @ 100 °C mm <sup>2</sup> /s	Viscosity @ 120 °C mm <sup>2</sup> /s	Dropping Point °C	Drop Melting Point °C	Cone Penetration mm x 0.1 @ 25 °C	Dissipation Factor @ 25 °C 1 MHz	Cable Flow test, simulated
	ASTM D-445	ASTM D-445	ASTM D-566	ASTM D-127	ASTM D-937	ASTM D-150	REA 39 & 89
TCV 70	> 18	-	> 73	-	> 70	-	-
TCV 75	> 18	-	> 80	-	> 50	-	-
TCV 85 R	-	> 20	-	> 90	> 35	< 0,0015	PASS 65°C
TCV 98 R	-	> 120	-	> 95	> 35	< 0,0015	PASS 80°C
TCV 482/1	-	> 160	> 95	> 100	> 50	< 0,0015	PASS 80°C
WITCOGEL IV	-	> 25	-	> 90	> 90	< 0,0015	PASS 65°C
FC 57 M	-	> 200	> 90	-	> 100	-	-

# **sonneborn**

R E F I N E D P R O D U C T S

## **Europe**

**Spaarndamseweg 466  
2022 EB Haarlem  
The Netherlands  
Phone: 31.23.525.8001  
Fax: 31.23.525.2855**

For contact details of our offices in **North America** and **Asia/Pacific** please visit our website.

**[www.sonneborn.com](http://www.sonneborn.com)**