

PRODUCT CATALOG OF NORCHEM

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1. SURFACE-ACTIVE SUBSTANCES LANITEX-OPTIMA-7 LLC

1.1. General characteristics of products

Anionic surfactants

Trademark	Chemical name	EU CAS No.	Active substance ,%	Appearance	pH solution with w (sab.),%	w (non-sulfir. sab.),%	w (electrolyte s),%	Expiry date, months
LABSANOR A™	Linear alkylbenzene sulfonic acid (LABSA) (R = C10-C13)	27176-87-0	> 96	Brown liquid	–	< 2.0	< 1.5 H2SO4	6
SULFANOR B1™	Laureth-1 sodium sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68.5 - 71.5	Colorless or yellowish flowing paste	6.0 - 8.5 for 4%	1.3 - 3.0	< 1.0 Na2SO4	12
SULFANOR B1 MB™	Laureth-1 sodium sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68.5 - 71.5	Colorless or yellowish flowing paste	6.0 - 8.5 for 4%	1.3 - 3.0	< 1.0 Na2SO4	12
SULFANOR A2™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	26 - 28	Liquid colorless or yellowish	6.0 - 7.0 for 10%	< 4.0	< 2.0 Na2SO4	6
SULFANOR B2™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 73	Colorless or yellowish flowing paste	7.0 - 9.0 for 3%	< 3.5	< 1.5 Na2SO4	12
SULFANOR B2 MB™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 73	Colorless or yellowish flowing paste	7.0 - 9.0 for 5%	2.5 - 3.0	< 2.5 Na2SO4	12
SULFANOR B2 K™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 72	Colorless or yellowish flowing paste	7.0 - 9.0 for 1%	< 3.5	< 1.0 Na2SO4	12
SULFANOR C30™	Sodium laureth-3 sulfosuccinate (R = C12 - 70% and C14 - 30%)	40754-59-4	30 - 35	Colorless or yellowish liquid	5.4 - 6.4 for 10%	–	< 0.2 Na2SO3	6

Nonionic surfactants

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	w (free amine),%	w, %	Expiry date, months
NORAMID B™	Coconut fatty acid diethanolamide, glycerin	68603-42-9, 56-81-5	> 94.5; incl. glycerol 9.0-11.0	Colorless or yellowish liquid	9.0 - 11.0 for 1%	< 5.0	< 0.5 H ₂ O	12
NORAMID ECO™	Palm kernel fatty acid diethanolamide, glycerin	68603-42-9, 56-81-5	> 94.5; incl. glycerol 9.0-10.5	Colorless or yellowish liquid	9.0 - 11.0 for 1%	< 5.0	< 0.5 H ₂ O	12
AMINOXIDE DMA16™	Laurylamine oxide (C12 alkyl dimethylamine oxide based on vegetable oils)	1643-20-5	29.0 - 31.0	Colorless or yellowish liquid	7.0 - 8.0 for 5%	< 0.3	< 0.1 H ₂ O ₂	12
AMINOXIDE DMA18™	Cocoamine oxide (C12-C18 alkyl dimethylamine oxide based on vegetable oils)	308062-28-4	29.0 - 31.0	Colorless or yellowish liquid	7.0 - 8.0 for 5%	< 0.3	< 0.1 H ₂ O ₂	12
AMINOXIDE OS / A™	Cocoamidopropylamine oxide (based on coconut or palm kernel fatty acids)	68155-09-9	29.0 - 31.0	Colorless or yellowish liquid	7.0 - 8.0 for 100%	< 1.0	< 0.2 H ₂ O ₂	12
AMINOXIDE ECO™	Cocoamidopropylamine oxide (based on palm kernel fatty acids)	69955-55-5	29.0 - 31.0	Colorless or yellowish liquid	7.0 - 8.0 for 100%	< 1.0	< 0.2 H ₂ O ₂	12

Amphoteric surfactants

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	w (free amine),%	w (NaCl), %	Expiry date, months
BETANOR Active A5™	Cocamidopropyl Betaine (from coconut or palm kernel fatty acids)	61789-40-4	> 37	Colorless or yellowish liquid	4.0 - 6.0 for 100%	< 0.3	5.8 - 7.3	6
BETANOR Active B5™	Cocamidopropyl betaine (based on fatty acids of	61789-40-4, 56-81-5	> 37	Colorless or yellowish liquid	4.0 - 6.0 for 100%	< 0.3	5.8 - 7.3	6

	coconut or palm kernel oils), glycerin							
BETANOR B4 ECO™	Cocoamidopropyl Betaine (based on palm kernel fatty acids).	61789-40-4	29 - 31	Colorless or yellowish liquid	4.0 - 6.0 for 5%	< 0.5	< 6.5	12
BETANOR B4™	Cocamidopropyl Betaine (from coconut or palm kernel fatty acids)	61789-40-4	29 - 31	Colorless or yellowish liquid	4.0 - 6.0 for 5%	< 0.5	< 6.5	6

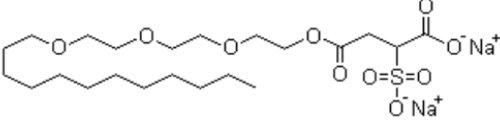
1.2. Structure, physical and chemical properties and application of products

Trademark	Structure, chemical name	Physicochemical properties	Application
LABSANOR A™	Linear alkylbenzenesulfonic acid (LABSA), $\text{R} - \text{C}_6\text{H}_4 - \begin{array}{c} \text{O} \\ \\ \text{S} = \text{O} \\ \\ \text{OH} \end{array}, \text{ где } \text{R} = \text{C}_{10}\text{H}_{21} - \text{C}_{13}\text{H}_{27}$ where R = C10 < 15%, C10-C11 - 30-55%, C13 < thirty%	Anionic surfactant. Effective foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Well soluble in water. To increase the solubility of LABSA salts, especially in alkaline media, hydrotropes are required, such as sodium cumene sulfonate, sodium xylene sulfonate, etc. Ammonium and ethanolamine salts of LABSA are readily soluble. Resistant to decomposition in strongly acidic and strongly alkaline environments, as well as in the presence of oxidizing agents. In neutral and alkaline environment, it is sensitive to hardness salts, it is most effective in the presence of complexing agents, precipitants, zeolites and other additives that soften water.	High-foamy acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for soft water: - Powders and liquid detergents for washing; - dishwashing detergents; - carwashing contactless detergents; - powder detergents; - hypochlorite and peroxide cleaning and bleaching agents; - acidic toilet bowl cleaners; - universal cleaning agents for hard surfaces; - textile auxiliaries; - COP-washing detergents.
SULFANOR A1™	Laureth-1 sodium sulfate, 27% solution $\text{RO-CH}_2\text{-CH}_2\text{-O-SO}_3\text{-Na}^+$, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. It shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, sulfonates, amine oxides, betaines, ethoxylated alcohols, etc. It has a lower skin irritation than alkyl sulfates. Easily thickened with electrolytes and	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - hair shampoos; - shower gels; - liquid hand soap;

Trademark	Structure, chemical name	Physicochemical properties	Application
SULFANOR B1™	Laureth-1 sodium sulfate, 70% paste RO-CH ₂ -CH ₂ -O-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. It's well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite. It has a higher detergency compared to sodium laureth-2 sulfate, but is inferior to it in terms of resistance to precipitation in the presence of hardness salts and solubility in cold water.	- dishwashing detergents; - liquid detergents for washing; - means for contactless car wash; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - windscreen wipers; - COP-washing detergents; - foaming agents for fire extinguishing; - detergents for alkaline metal degreasers.
SULFANOR B1 MB™	Laureth-1 sodium sulfate, 70% paste RO-CH ₂ -CH ₂ -O-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certificate		

Trademark	Structure, chemical name	Physicochemical properties	Application
SULFANOR A2™	Laureth-2 sodium sulfate, 27% solution RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, sulfonates, amine oxides, betaines, ethoxylated alcohols, etc. Has a lower skin irritation than alkyl sulfates. Easily thickens with electrolytes	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - hair shampoos and shower gels; - liquid hand soap; - dishwashing detergents;

Trademark	Structure, chemical name	Physicochemical properties	Application
SULFANOR B2™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	and surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. It's well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite.	- liquid detergents for washing; - means for contactless car wash; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - wipers; - COP-washing detergents.
SULFANOR B2 MB™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certificate.		
SULFANOR B2 K™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of C12-C16 fatty alcohols	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, ethoxylated alcohols, sulfonates, amine oxides, betaines, etc. It has a lower irritant capacity for the skin than alkyl sulfates. Easily thickens with electrolytes and surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. Well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite. Has a higher detergency in warm and hot water compared to laureth-2 (C12-C14) sodium sulfate, but inferior to it in solubility in water at low temperatures and foaming ability.	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - hair shampoos and shower gels; - liquid hand soap; - means for hand washing dishes; - liquid detergents for washing; - carwashing contactless detergents; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - windscreen wipers; - COP-washing detergents.

Trademark	Structure, chemical name	Physicochemical properties	Application
SULFANOR C30™	Sodium laureth-3 sulfosuccinate, 30% solution  where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. It has good foaming properties. Shows hydrotropic properties. Effective wetting agent, dispersant, emulsifier and solubilizer. It has a low irritant capacity in contact with skin and mucous membranes even at high concentrations, dermatologically "mild" surfactant. It has a high detergency. Retains its properties in hard water, easily disperses calcium soaps. Well soluble in water. Easily rinsed off the surface to be cleaned. Stable in the pH range from 5 to 9. It Hydrolyzes at temperatures above 40° FROM.	High-foamy, slightly alkaline, neutral and slightly acidic cleaners without oxidants for water of any hardness: - hair shampoos; - shower gels; - liquid hand soap; -dishwashing detergents; - liquid detergents for washing delicate fabrics and baby clothes; - cleaning agents for woolen carpets; - windscreen wipers; - degreasers with organic solvents; - universal cleaning agents.
NORAMID™	Coconut fatty acid diethanolamide $\begin{array}{c} \text{O} \\ \parallel \\ \text{R}-\text{C}-\text{N} \begin{cases} \text{CH}_2\text{CH}_2\text{OH} \\ \text{CH}_2\text{CH}_2\text{OH} \end{cases} \end{array}$ where R - alkyl radical of coconut oil fatty acids, and glycerin HO-CH2-CH (OH) -CH2-OH	Non-ionic surfactant. Contains 9-11% glycerin. Disperses when dissolved in water. Thickened in the presence of alkyl sulfates, alkyl ethoxysulfates, sulfonates, high HLB ethoxylated alcohols and other effective emulsifiers and solubilisates. When thickened, the surfactant dispersion turns into a transparent gel. Optimal thickening occurs in slightly acidic environments. Stabilizes foam and improves its quality. Mixed with glycerin, it has a superfatting and moisturizing effect. Stable in the pH range from 5 to 9. It Improves the stability of formulations at low temperatures.	High-foamy, slightly alkaline, neutral and slightly acidic cleaners without oxidants for water of any hardness: - hair shampoos; - shower gels, including for children; - liquid hand soap; - shaving creams; - dishwashing detergents; - liquid detergents for washing delicate fabrics and baby clothes; - cleaning agents for woolen carpets; - cleaning floors detergents; - universal cleaning agents.
NORAMID ECO™	Palm kernel fatty acid diethanolamide $\begin{array}{c} \text{O} \\ \parallel \\ \text{R}-\text{C}-\text{N} \begin{cases} \text{CH}_2\text{CH}_2\text{OH} \\ \text{CH}_2\text{CH}_2\text{OH} \end{cases} \end{array}$ where R - alkyl radical of fatty acids of palm kernel oil, and glycerin HO-CH2-CH (OH) -CH2-OH		

Trademark	Structure, chemical name	Physicochemical properties	Application
AMINOXIDE DMA16™	Laurylamine oxide based on vegetable oils, 30% solution $\begin{array}{c} \text{CH}_3 \\ \\ \text{R} - \text{N}^+ - \text{O}^- \\ \\ \text{CH}_3 \end{array}$ where R is an alkyl radical C12	Non-ionic surfactant. In acidic media it is protonated, acquiring the properties of a cationic surfactant. Foaming agent. Stabilizes and improves the structure of the foam. Excellent wetting agent, emulsifier and solubilizer. Has a high detergent effect. Not sensitive to hard water. Stable over a wide pH range, from strongly acidic to strongly alkaline media. Compatible with strong oxidants such as sodium hypochlorite and peroxides. In mixtures with surfactants, alkalis and hypochlorites, it has a thickening effect. In acidic environments, it exhibits conditioning, antistatic and bactericidal properties. Being a cationic surfactant, in an acidic environment it forms precipitates with an AAS, for example LABSK.	Highly foamy, highly alkaline, neutral and acidic cleaners with and without oxidizing agents for water of any hardness: - hair shampoos; - shower gels; - liquid hand soap; - bath foam; - dishwashing detergents; - hypochlorite gels for toilet bowls; - bleaches for fabrics; - means for cleaning floors; - alkaline gels for cleaning cookers and grills; - cleaners for bathrooms; - universal cleaning agents; - contactless car shampoos; - industrial cleaners COP-washing.
AMINOXIDE DMA18™	Cocoamine oxide based on vegetable oils, 30% solution $\begin{array}{c} \text{CH}_3 \\ \\ \text{R} - \text{N}^+ - \text{O}^- \\ \\ \text{CH}_3 \end{array}$ where R is an alkyl radical C12-C18		
AMINOXIDE OS/A™	Cocoamidopropylamine oxide based on coconut or palm kernel fatty acids, 30% solution $\begin{array}{c} \text{CH}_3 \\ \\ \text{R} - \text{CO} - \text{NH} - (\text{CH}_2)_3 - \text{N}^+ - \text{O}^- \\ \\ \text{CH}_3 \end{array}$ where R is an alkyl radical C12-C18	Non-ionic surfactant. Foaming agent. Stabilizes and improves the structure of the foam. Excellent emulsifier and solubilizer. It is characterized by high detergency. Dermatologically "soft" surfactant. It improves skin compatibility with conventional anionic surfactants, which have a strong degreasing and irritating effect. Not sensitive to hard water. Due to the hydrolysis of the amide group in the composition, it is not recommended for use in strongly acidic, strongly alkaline and hypochlorite environments. It is compatible with peroxides. In mixtures with surfactants, it has a thickening effect.	High-foamy alkaline, neutral and acidic cleaners with or without peroxides for water of any hardness: - hair shampoos; - shower gels; - liquid hand soap; - bath foam; - dishwashing detergents; - windscreen wipers; - cleaning agents for carpets and upholstery; - cleaners for bathrooms; - universal cleaning agents; - car shampoos for hand washing; - universal cleaning agents.
AMINOXIDE ECO™	Cocoamidopropylamine oxide based on palm kernel oil fatty acids, 30% solution $\begin{array}{c} \text{CH}_3 \\ \\ \text{R} - \text{CO} - \text{NH} - (\text{CH}_2)_3 - \text{N}^+ - \text{O}^- \\ \\ \text{CH}_3 \end{array}$ where R is an alkyl radical C12-C18		

Trademark	Structure, chemical name	Physicochemical properties	Application
BETANOR Active A5™	Cocamidopropyl betaine based on coconut or palm kernel fatty acids, 37% solution $\begin{array}{c} \text{O} \qquad \qquad \text{CH}_3 \\ \parallel \qquad \qquad \\ \text{RC}-\text{NH}(\text{CH}_2)_3-\text{N}^+-\text{CH}_2\text{COO}^- \\ \qquad \qquad \qquad \\ \qquad \qquad \qquad \text{CH}_3 \end{array}$	Amphoteric surfactant. Foaming agent. Stabilizes and improves the structure of the foam. Wetting agent, emulsifier and solubilizer. It has a high detergent effect. Dermatologically "soft" surfactant. Improves skin compatibility with conventional anionic surfactants, which have a strong degreasing and irritating effect. It is not sensitive to hard water. Due to the hydrolysis of the amide group in the composition, it is not recommended for use in oxidizing, strongly acidic and strongly alkaline environments. In mixtures with surfactants, it has a thickening effect. It shows conditioning and antistatic properties. It is compatible with all types of surfactants.	High-foamy alkaline, neutral and acidic cleaners without oxidants for water of any hardness: - hair shampoos; - shower gels; - liquid hand soap; - bath foam; - dishwashing detergents; - windscreen wipers; - cleaning agents for carpets and upholstery; - cleaners for bathrooms; - universal cleaning agents; - car shampoos.
BETANOR Active B5™	Cocamidopropyl betaine based on fatty acids of coconut or palm kernel oils, 37% solution; glycerol $\begin{array}{c} \text{O} \qquad \qquad \text{CH}_3 \\ \parallel \qquad \qquad \\ \text{RC}-\text{NH}(\text{CH}_2)_3-\text{N}^+-\text{CH}_2\text{COO}^- \\ \qquad \qquad \qquad \\ \qquad \qquad \qquad \text{CH}_3 \end{array}$		
BETANOR B4 ECO™	Cocoamidopropyl betaine based on palm kernel fatty acids, 30% solution $\begin{array}{c} \text{O} \qquad \qquad \text{CH}_3 \\ \parallel \qquad \qquad \\ \text{RC}-\text{NH}(\text{CH}_2)_3-\text{N}^+-\text{CH}_2\text{COO}^- \\ \qquad \qquad \qquad \\ \qquad \qquad \qquad \text{CH}_3 \end{array}$		
BETANOR B4™	Cocamidopropyl betaine based on coconut or palm kernel fatty acids, 30% solution $\begin{array}{c} \text{O} \qquad \qquad \text{CH}_3 \\ \parallel \qquad \qquad \\ \text{RC}-\text{NH}(\text{CH}_2)_3-\text{N}^+-\text{CH}_2\text{COO}^- \\ \qquad \qquad \qquad \\ \qquad \qquad \qquad \text{CH}_3 \end{array}$		

2. Surfactants ZAVOD SINTANOLOV LLC
2.1. General characteristics and properties of products
Anionic surfactants

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH of solution with w (sab.),%	w (non-sulfir. sab.),%	w (electrolytes), %
Alkyl sulfate	Sodium lauryl sulfate (R = C12 - 70% and C14 - 30%)	85586-07-8	28.0 - 30.0	Liquid colorless or yellowish, transparent or with opalescence	11.0 - 12.0 for 4%	< 2.0	< 2.0 Na ₂ SO ₄
STENOR 25E5-P3™	A mixture of mono- and diesters of phosphoric acid and ethoxylates of alcohols C12-C15	68071-35-2	> 98	Viscous liquid from yellow to light brown, with opalescence	< 2.0 for 5%	-	< 2.0 H ₂ O
LABSANOR A™	Linear alkylbenzene sulfonic acid (C12)	27176-87-0	> 96	Brown liquid	–	< 2.0	< 1.5 H ₂ SO ₄
SULFANOR B1™	Laureth-1 sodium sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68.5 - 71.5	Flowing paste colorless or yellowish	6.0 - 8.5 for 4%	1.3 - 3.0	< 1.0 Na ₂ SO ₄
SULFANOR B1 MB™	Laureth-1 sodium sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68.5 - 71.5	Flowing paste colorless or yellowish	6.0 - 8.5 for 4%	1.3 - 3.0	< 1.0 Na ₂ SO ₄
SULFANOR A2™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	26 - 28	Liquid colorless or yellowish	6.0 - 7.0 for 10%	< 4.0	< 2.0 Na ₂ SO ₄
SULFANOR B2™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 73	Flowing paste colorless or yellowish	7.0 - 9.0 for 3%	< 3.5	< 1.5 Na ₂ SO ₄
SULFANOR B2 MB™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 73	Flowing paste colorless or yellowish	7.0 - 9.0 for 5%	2.5 - 3.0	< 2.5 Na ₂ SO ₄
SULFANOR B2 K™	Sodium laureth-2 sulfate (R = C12 - 70% and C14 - 30%)	68891-38-3	68 - 72	Flowing paste colorless or yellowish	7.0 - 9.0 for 1%	< 3.5	< 1.0 Na ₂ SO ₄

Nonionic surfactants

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	Hydroxyl number	w (H ₂ O),%	w (PEG),%
SINTANOR ALM-1™	Laureth-1 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Liquid colorless or yellowish, transparent or turbid at 40±five°FROM	5.0 - 7.0 for 1%	234 - 240	< 0.1	< 1.0
SINTANOR ALM-2™	Laureth-2 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Liquid colorless or yellowish, transparent or turbid at 40±five°FROM	6.0 - 11.0 for 1%	196 - 209	< 0.2	< 1.5
SINTANOR ALM-2 MB™	Laureth-2 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Liquid colorless or yellowish, transparent or turbid at 40±five°FROM	6.0 - 11.0 for 1%	196 - 209	< 0.2	< 1.5
SINTANOR ALM-3™	Laureth-3 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Liquid colorless or yellowish, transparent or turbid at 20±five°FROM	6.0 - 9.0 for 1%	166 - 176	< 0.3	< 1.5
SINTANOR ALM-7™	Laureth-7 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Viscous liquid or paste, colorless or yellowish	6.0 - 9.0 for 1%	-	-	< 3.0
SINTANOR ALM-7 MB™	Laureth-7 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Viscous liquid or paste, colorless or yellowish	6.0 - 9.0 for 1%	-	-	< 3.0
SINTANOR ALM-8™	Laureth-8 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	Viscous liquid or paste, colorless or yellowish	6.0 - 9.0 for 1%	-	-	< 4.0
SINTANOR ALM-10™	Laureth-10 for household chemicals (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	White or yellowish paste at 20±five°FROM	6.0 - 9.0 for 10%	-	-	< 4.0
SINTANOR ALM-10N MB™	Laureth-10 for cosmetics (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	White paste at 20±five°FROM	5.0 - 8.0 for 5%	80 - 95	-	< 4.0

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	Hydroxyl number	w (H ₂ O),%	w (PEG),%
SINTANOR ALM-23™	Laureth-23 (R = C12 - 70% and C14 - 30%)	68439-50-9	≈ 100	White or yellowish paste	6.0 - 7.5 for 5%	43-49	< 0.5	-
SINTANOR DS-10™	Cocket-10 (R = C10< 3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%)	68213-23-0	≈ 100	White or yellowish paste at 20±five°FROM	6.0 - 9.0 for 10%	-	-	< 4.0
SINTANOR AE-7™	Miret-7 (R = C14-C15)	68951-67-7	≈ 100	White paste at 20±five°FROM	acid number mgKOH / g 0.05 - 0.20	98 - 106	< 0.2	< 3.0
SINTANOR AE-8.1™	Miret-8.1 (R = C14-C15)	68951-67-7	≈ 100	White paste at 20±five°FROM	acid number mgKOH / g 0.05 - 0.30	94 - 102	< 0.3	< 3.0
SINTANOR E5-9-11™	C9 / C11 Paret-5 (R = C9 - 30-50%, C11 - 50-70%)	68439-45-2	≈ 100	Liquid colorless or yellowish, transparent or turbid at 25°FROM	acid number mgKOH / g 0.05 - 0.20	143 - 158	< 0.5	< 3.0
SINTANOR E6-9-11™	C9 / C11 Paret-6 (R = C9 - 30-50%, C11 - 50-70%)	68439-45-2	≈ 100	Liquid colorless or yellowish, transparent or turbid at 25°FROM	5.0 - 7.0 for 1%	120 - 130	< 1.0	-
SINTANOR E8-9-11™	C9 / C11 Paret-8 (R = C9 - 30-50%, C11 - 50-70%)	68439-45-2	≈ 100	Liquid colorless or yellow	acid number mgKOH / g 0.05 - 0.20	100 - 110	< 0.2	-
SINTANOR 5-12-15™	C12-C15 Paret-5 (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68131-39-5	≈ 100	Liquid colorless or yellowish, transparent or turbid at 25°FROM	5.0 - 8.0 for 10%	125 - 140	< 0.5	< 3.0
SINTANOR ACSE-12™	Ceteareth-12 (R = C16 - 22-32%, C18 - 66-76%)	68439-49-6	≈ 100	White or yellowish paste at 20±five°FROM	6.0 - 8.0 for 1%	-	-	< 4.0
SINTANOR OS-25™	Cetearet-25 (R = C16 - 22-32%, C18 - 66-76%)	68439-49-6	≈ 100	Waxy flakes at 20±five°FROM	5.0 - 7.0 for 5%	33 - 39	< 0.8	-

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	Hydroxyl number	w (H ₂ O),%	w (PEG),%
SINTANOR OS-50™	Ceteareth-50 (R = C16 - 22-32%, C18 - 66-76%)	68439-49-6	≈ 100	Waxy flakes at 20±five°FROM	5.0 - 7.0 for 5%	21 - 27	< 0.8	-
SINTANOR OS-80™	Cetearet-80 (R = C16 - 22-32%, C18 - 66-76%)	68439-49-6	≈ 100	Waxy flakes at 20±five°FROM	5.0 - 7.0 for 5%	15 - 25	< 0.5	-
SINTANOR mix OS-25 and NORPEG 4000™	Cetearet-25 (C16-C18) and PEG-4000	68439-49-6	≈ 100	Waxy flakes at 20±five°FROM	5.0 - 7.0 for 5%	30 - 38	< 0.8	-
Product OS-20 A™	A mixture of polyoxyethylene glycol ethers EO20 of higher fatty alcohols C16-C18 for chem. industry	68439-49-6	≈ 100	White to yellow waxy scales	8.0 - 10.5 for 10%	-	< 0.2	-
Product OS-20 B™	A mixture of polyoxyethylene glycol ethers EO20 of higher fatty alcohols C16-C18 for the textile industry	68439-49-6	≈ 100	Yellow to light brown waxy scales	8.0 - 10.5 for 10%	-	-	-
SINTANOR 7C MB™	Cocket-7 (R = C10<3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%). RSPO certificate	68213-23-0	≈ 100	White or yellowish paste at 15°FROM	6.0 - 9.0 for 1%	-	-	< 4.0
SINTANOR 7C™	Cocket-7 (R = C10< 3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%)	68213-23-0	≈ 100	White or yellowish paste at 15°FROM	6.0 - 9.0 for 1%	-	-	< 4.0
STENOR K36™	PEG-36 castor oil	61791-12-6	≈ 100	Viscous liquid	5.0 - 7.0 for 10%	-	< 0.5	-
STENOR K40™	PEG-40 hydrogenated castor oil	61788-85-0	≈ 100	Dense yellowish mixture	6.0 - 7.0 for 10%	-	< 2.0	-
STENOR K455™	PEG-40 hydrogenated castor oil / propylene glycol / water	61788-85-0, 57-55-6, 7732-18-5	≈ 100	Viscous yellow liquid	6.0 - 8.0 for 10%	-	4.0 - 6.0	-

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.),%	Hydroxyl number	w (H ₂ O),%	w (PEG),%
STENOR 24XO™	PPG-1 Lauret-7 (R = C12 - 70% and C14 - 30%)	61788-85-0, 57-55-6, 7732-18-5	≈ 100	Transparent or cloudy liquid from colorless to yellowish	5.0 - 7.0 for 10%	-	< 0.2	-
STENOR 23E4P5™	PPG-5 C12-C13 Paret-4	-	≈ 100	Viscous transparent yellow liquid	5.0 - 7.0 for 1%	82 - 90	< 0.2	-
STENOR 24E4P5™	PPG-5 Lauret-4 (R = C12 - 70% and C14 - 30%)	68439-51-0	≈ 100	Transparent yellowish liquid	5.0 - 7.0 for 1%	82 - 90	< 0.2	-
STENOR 25P15E25™	PPG-15 / PEG-25 C12-C15 alcohols (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68551-13-3	≈ 100	Viscous turbid yellow liquid	5.0 - 7.0 for 1%	42 - 53	< 0.2	-
STENOR 25P15E10™	PPG-15 / PEG-10 C12-C15 alcohols (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68551-13-3	≈ 100	Viscous cloudy liquid	5.0 - 7.0 for 1%	35 - 45	< 0.2	-
STENOR 25P15E5™	PPG-15 / PEG-5 C12-C15 alcohols (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68551-13-3	≈ 100	White paste	5.0 - 7.0 for 1%	21 - 31	< 0.2	-
STEAROX 6™	PEG-6 Monostearate (90-95%) / Cetareth-20 (5-10%)	10108-28-8 / 68439-49-6	≈ 100	Vaseline-like cream-colored mass	ch.about. mgKOH / g 80 - 88	-	< 0.3	-
STENOR 67P15E5™	PPG-15 / PEG-5 C16-C17 alcohols	-	≈ 100	Turbid flowing liquid	5.0 - 7.0 for 1%	40 - 45	< 0.2	—
Oxyethylated rapeseed oil™ (ORM)	Rapeseed oil ethoxylated 5-7 mol EO	165658-60-6	≈ 100	Viscous brown liquid	acid number mgKOH / g < 1.0	—	—	—

2.2. Structure, physical and chemical properties and application of products

Anionic surfactants

Trademark	Structure, chemical name	Physicochemical properties	Application
Alkyl sulfate™	Sodium lauryl sulfate, 30% solution $\text{RO-SO}_3^- \text{Na}^+$, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. Effective foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Solubility greatly depends on the temperature of the water. Well soluble in water at a temperature of 20°C and above. Resistant to decomposition in weakly acidic and strongly alkaline environments, as well as in the presence of oxidizing agents. In neutral and alkaline environments, it is sensitive to hardness salts, it is most effective in the presence of complexing agents, precipitants, zeolites and other additives that soften water.	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for soft water: - liquid detergents for washing; - dishwashing detergents; - contactless carwashing detergents; - alkaline cleaning agents; - hypochlorite and peroxide cleaning and bleaching agents; - windscreen wipers; - universal cleaning agents for hard surfaces; - textile auxiliaries; - COP-washing detergents.
STENOR 25E5-P3™	A mixture of mono- and diesters of phosphoric acid and ethoxylates EO5 alcohols C12-C15 $[\text{RO- (CH}_2\text{-CH}_2\text{-O) }_5\text{] } 2\text{PO}_2^- \text{Na}^+ \text{ and}$ $\text{RO- (CH}_2\text{-CH}_2\text{-O) }_5\text{-PO}_3^- 2\text{Na}^+$ (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	Anionic surfactant. It is well dispersed in water, the neutralized form is highly soluble in water. Effective emulsifier and solubilizer with medium foaming capacity. Chemically stable in strongly acidic and strongly alkaline environments. Has high detergent properties. Possesses anti-corrosion, extreme pressure and lubricating properties. Shows an antistatic and softening effect on fabrics. In neutral and alkaline environments, it is sensitive to hardness salts, it is most effective in the presence of complexing agents, precipitants and other additives that soften water.	Medium acidic, neutral and alkaline products for soft water: - detergent, anticorrosive, lubricating, dispersing anti-seize additive in cleaning agents for metals and coolants; - alkaline cleaning agents for hard surfaces; - dispersant for pigment solutions; - sludge separator; - emulsifier for emulsion polymerization processes; - a component of detergents, lubricants for the textile, fur and leather industries; - inhibitor of paraffinic and asphalt-resinous deposits in the oil industry.

Trademark	Structure, chemical name	Physicochemical properties	Application
LABSANOR A™	Linear alkylbenzenesulfonic acid (LABSA), $\text{R} - \text{C}_6\text{H}_4 - \begin{array}{c} \text{O} \\ \\ \text{S} = \text{O} \\ \\ \text{OH} \end{array}, \text{ где } \text{R} = \text{C}_{10}\text{H}_{21} - \text{C}_{13}\text{H}_{27}$ where R = C10 < 15%, C10-C11 - 30-55%, C13 < thirty%	Anionic surfactant. Effective foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Well soluble in water. To increase the solubility of LABSA salts, especially in alkaline media, hydrotropes are required, such as sodium cumene sulfonate, sodium xylene sulfonate, etc. Ammonium and ethanolamine salts of LABSA are readily soluble. Resistant to decomposition in strongly acidic and strongly alkaline environments, as well as in the presence of oxidizing agents. In neutral and alkaline environments, it is sensitive to hardness salts, it is most effective in the presence of complexing agents, precipitants, zeolites and other additives that soften water.	High-foamy acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for soft water: - powders and liquid detergents for washing; - dishwashing detergents; - means for contactless car wash; - powder detergents; - hypochlorite and peroxide cleaning and bleaching agents; - acidic toilet bowl cleaners; - universal cleaning agents for hard surfaces; - textile auxiliaries; - means for COP-washing.
SULFANOR A1™	Laureth-1 sodium sulfate, 27% solution RO-CH₂-CH₂-O-SO₃- Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, sulfonates, amine oxides, betaines, ethoxylated alcohols, etc. Has a lower skin irritation than alkyl sulfates. Easily thickened with electrolytes and surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. Well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite. It has a higher detergency compared to sodium laureth-2 sulfate, but is inferior to it in terms of resistance to precipitation in the presence of hardness salts and solubility in cold water.	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - shampoos for hair; - shower gels; - liquid hand soap; - dishwashing detergents; - liquid detergents for washing; - means for contactless car wash; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - windscreen wipers; - means for COP-washing; - foaming agents for fire extinguishing; - detergents for alkaline metal degreasers.
SULFANOR B1™	Laureth-1 sodium sulfate, 70% paste RO-CH₂-CH₂-O-SO₃- Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%		
SULFANOR B1 MB™	Laureth-1 sodium sulfate, 70% paste RO-CH₂-CH₂-O-SO₃- Na +, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certificate		

Trademark	Structure, chemical name	Physicochemical properties	Application
SULFANOR A2™	Laureth-2 sodium sulfate, 27% solution RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, sulfonates, amine oxides, betaines, ethoxylated alcohols, etc. Has a lower skin irritation than alkyl sulfates. Easily thickens with electrolytes and surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. Well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite.	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - hair shampoos and shower gels; - liquid hand soap; - dishwashing detergents; - liquid detergents for washing; - means for contactless car wash; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - windscreen wipers; - means for COP-washing.
SULFANOR B2™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%		
SULFANOR B2 MB™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certification.		
SULFANOR B2 K™	Sodium laureth-2 sulfate, 70% paste RO- (CH ₂ -CH ₂ -O) 2-SO ₃ – Na +, where R is the alkyl radical of C12-C16 fatty alcohols	Anionic surfactant. Foaming agent, wetting agent, dispersant, emulsifier and solubilizer. Shows a synergistic effect in mixtures with many types of surfactants: alkyl sulfates, ethoxylated alcohols, sulfonates, amine oxides, betaines, etc. Has a lower irritant capacity for the skin than alkyl sulfates. Easily thickens with electrolytes and surfactants - diethanolamides of fatty acids, betaines, amine oxides, etc. Retains its properties in hard water. Well soluble in water and easy to wash off. Stable in highly alkaline environments and in the presence of sodium hypochlorite. It has a higher detergency in warm and hot water compared to laureth-2 (C12-C14) sodium sulfate, but inferior to it in solubility in cold water and foaming ability.	Highly foamy, slightly acidic, neutral and alkaline cleaners, including gel-like and containing oxidants, for water of any hardness: - hair shampoos and shower gels; - liquid hand soap; - dishwashing detergents; - liquid detergents for washing; - means for contactless car wash; - cleaning agents for stoves; - hypochlorite cleaning and bleaching agents; - universal cleaning agents for hard surfaces; - textile auxiliaries; - windscreen wipers; - means for COP-washing.

Nonionic surfactants

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR ALM-1™	Laureth-1 RO-CH ₂ -CH ₂ -OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 3.8. When dissolved in water at a concentration of less than 10%, it forms a rapidly exfoliating white emulsion, and at concentrations of 20-80%, it forms a paste. Soluble in non-polar organic solvents. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Wetting agent. Defoamer. Emulsifier of inverse emulsions w / o (water in oil). Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – intermediate product for industrial production of the corresponding C12 / C14 alkyl ethoxy sulfate (laureth sulfate 1EO); – antifoam in liquid detergents; – an emulsifier of inverse emulsions in degreasers; – products for dyeing and bleaching hair.
SINTANOR ALM-2™	Laureth-2 R- (O-CH ₂ -CH ₂) 2-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 6.3. When dissolved in water at a concentration of less than 10%, it forms a white emulsion, at a concentration of 20-80% a paste. Soluble in non-polar organic solvents. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of inverse emulsions w / o (water in oil). Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – intermediate product for industrial production of the corresponding C12 / C14 alkyl ethoxy sulfate (2EO laureth sulfate); – emulsifiers for mineral oils, as part of cleaners used at low temperatures;
SINTANOR ALM-2 MB™	Laureth-2 R- (O-CH ₂ -CH ₂) 2-OH, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certificate.	Non-ionic surfactant. HLB 6.3. When dissolved in water at a concentration of less than 10%, it forms a white emulsion, at a concentration of 20-80% a paste. Soluble in non-polar organic solvents. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of inverse emulsions w / o (water in oil). Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – intermediate product for industrial production of the corresponding C12 / C14 alkyl ethoxy sulfate (2EO laureth sulfate); – emulsifiers for mineral oils, as part of cleaners used at low temperatures;

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR ALM-3™	Laureth-3 R- (O-CH ₂ -CH ₂) 3-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 8.1. When dissolved in water at a concentration of less than 10%, it forms a white emulsion, at a concentration of 20-60%, a gel. Soluble in non-polar organic solvents. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Dispersant. Emulsifier of inverse emulsions w / o (water in oil). Wetting agent. Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – intermediate product for industrial production of the corresponding C12 / C14 alkyl ethoxy sulfate (3EO laureth sulfate); – emulsifier of mineral oils and oil-soluble co-emulsifier in detergents and cleaning agents.
SINTANOR ALM-7™	Laureth-7 R- (O-CH ₂ -CH ₂) 7-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 12.3. When dissolved in water at a concentration of less than 10%, it forms a clear solution, at a concentration of 20-60% gel. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Wetting agent. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – dishwashing detergents; – bleaching baths in the textile industry, – car care products.
SINTANOR ALM-7 MB™	Laureth-7 R- (O-CH ₂ -CH ₂) 7-OH, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certification	Non-ionic surfactant. HLB 12.3. When dissolved in water at a concentration of less than 10%, it forms a clear solution, at a concentration of 20-60% gel. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Medium-strength surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal neutral cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – dishwashing detergents; – bleaching baths in the textile industry, – detergents for dyeing fabrics; – car care products.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR ALM-8™	Laureth-8 R- (O-CH₂-CH₂) 8-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 13.4. When dissolved in water at a concentration of less than 20%, it forms a clear solution, at a concentration of 20-60% gel. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; - dishwashing detergents; – bleaching baths in the textile industry, – detergents for dyeing fabrics; – car care products.
SINTANOR ALM-10™	Laureth-10 for household chemicals R- (O-CH₂-CH₂) 10-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 13.9. When dissolved in water at a concentration of less than 30%, it forms a clear solution, at a concentration of 30-60% gel. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – dishwashing detergents; – bleaching baths in the textile industry, – detergents for dyeing fabrics; – car care products.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR ALM-10N MB™	Laureth-10 for cosmetics R- (O-CH ₂ -CH ₂) 10-OH, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10<1%, C12 - 65-72%, C14 - 22-28%, C16 - 4-8%. RSPO certificate	Non-ionic surfactant. HLB 13.9. When dissolved in water at a concentration of less than 30%, it forms a clear solution, at a concentration of 30-60% gel. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – dishwashing detergents; – bleaching baths in the textile industry, – detergents for dyeing fabrics; – car care products.
SINTANOR ALM-23™	Laureth-23 R- (O-CH ₂ -CH ₂) 23-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 16.7. Well soluble in water. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Solvent and hydrotrope. Solubilizer and dispersant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – a solubilizer in skin care products; – dispersant, hydrotrope, solubilizer in industrial detergents and cleaning agents.
SINTANOR DS-10™	Cocket-10 (C12-C18) R- (O-CH ₂ -CH ₂) 10-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C10 < 3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%	Non-ionic surfactant. HLB 14.9. Well soluble in water. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Wetting agent, emulsifier of direct emulsions such as oil in water, degreaser. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - compositions for decoction, bleaching and dyeing of textile materials; - degreaser for leather and fur processing; - degreaser for metal surfaces; - brightening additive in electroplating industry.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR AE-7™	Miret-7 (C14-C15) R- (O-CH ₂ -CH ₂) 7-OH, where R is the alkyl radical of synthetic fatty alcohols, C14-C15	Non-ionic surfactant. HLB 11.6. Well soluble in water. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Wetting agent, emulsifier of direct emulsions such as oil in water, degreaser. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - universal cleaning agents; - degreasers and stain removers for pigment-oil stains; - alkaline cleaners for the care of kitchen surfaces; - acidic bathroom cleaners; - dishwashing detergents; - bleaching baths in the textile industry, - detergents for dyeing fabrics; - car care products.
SINTANOR AE-8.1™	Miret-8.1 (C14-C15) R- (O-CH ₂ -CH ₂) 8-OH, where R is the alkyl radical of synthetic fatty alcohols, C14-C15	Non-ionic surfactant. HLB 12.2. Well soluble in water. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Wetting agent, emulsifier of direct emulsions such as oil in water, degreaser. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - universal cleaning agents; - degreasers and stain removers for pigment-oil stains; - alkaline cleaners for the care of kitchen surfaces; - acidic bathroom cleaners; - dishwashing detergents; - bleaching baths in the textile industry, - detergents for dyeing fabrics; - car care products.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR E5-9-11™	C9 / C11 Paret-5 R- (O-CH ₂ -CH ₂) 5-OH, where R is the alkyl radical of synthetic fatty alcohols, C9 - 30-50%, C11 - 50-70%	Non-ionic surfactant. HLB 11.6. Well soluble in water without the stage of gelation with the formation of an opalescent solution. High detergent, wetting, degreasing and emulsifying properties. Has an average foaming ability. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - means for cleaning hard surfaces; - degreaser and stain remover for commercial washing; - universal cleaning agents; - floor care products; - bleaches for fabrics; - alkaline cleaning agents for the care of kitchen surfaces.
SINTANOR E6-9-11™	C9 / C11 Paret-6 R- (O-CH ₂ -CH ₂) 6-OH, where R is the alkyl radical of synthetic fatty alcohols, C9 - 30-50%, C11 - 50-70%	Non-ionic surfactant. HLB 12.5. Well soluble in water without gelation step. High detergent, wetting, degreasing and emulsifying properties. Has an average foaming ability. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - means for cleaning hard surfaces; - degreaser and stain remover for commercial washing; - universal cleaning agents; - floor care products; - bleaches for fabrics; - alkaline cleaning agents for the care of kitchen surfaces.
SINTANOR E8-9-11™	C9 / C11 Paret-8 R- (O-CH ₂ -CH ₂) 8-OH, where R is the alkyl radical of synthetic fatty alcohols, C9 - 30-50%, C11 - 50-70%	Non-ionic surfactant. HLB 13.8. Well soluble in water. High detergent, wetting, degreasing and emulsifying properties. Has an average foaming capacity. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - universal cleaning agents for hard surfaces; - ZhMS for professional washing; - alkaline cleaning agents for kitchen surfaces; - acidic bathroom cleaners; - bleaches for fabrics.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR 5-12-15™	C12-C15 Paret-5 R- (O-CH ₂ -CH ₂) 5-OH, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB 7.8. Emulsifies when dissolved in water. It dissolves in lower aliphatic alcohols. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Dispersant. Emulsifier of inverse emulsions w / o (water in oil). Wetting agent. Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – emulsifier of fats and oils, oil-soluble co-emulsifier in detergents and cleaning agents. - liquid detergents for washing.
SINTANOR ACSE-12™	Ceteareth-12 C16-C18 R- (O-CH ₂ -CH ₂) 12-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. HLB 13.5. Well soluble in water. It has an average foaming capacity. Effective oil-in-water dispersant and emulsifier. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - means for skin and hair care as an emollient and dispersing component, co-emulsifier of O / W systems; - synthetic detergents for washing; - additive for emulsifying base oils in hydraulic fluids; - auxiliaries for the textile industry; emulsification of oils in defoaming emulsions.
SINTANOR OS-25™	Ceteareth-25 C16-C18 R- (O-CH ₂ -CH ₂) 25-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. GLB. Well soluble in water, ethanol, methylene chloride. Ideal for creating stable oil-in-water emulsions even at room temperature. Creates stable formulations of preparations in which the active substance is present in solid form. Provides very good dispersion of the active substance in the final product.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - ointments, incl. antiseptic; - spray dressings; - dermatological cosmetics; - balms; - creams; - oils.

Trademark	Structure, chemical name	Physicochemical properties	Application
SINTANOR OS-50™	Ceteareth-50 C16-C18 R- (O-CH ₂ -CH ₂) 50-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. HLB 18. Well soluble in water. Low foaming properties. Effective dispersant, solubilizer and oil-in-water emulsifier. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - emulsifier, dispersant and solubilizer for detergents and cleaning agents; - stabilizer for the degradation of granular enzymes when surfactants are applied to the surface; - a binder for granulation and tableting; - industrial cleaning products.
SINTANOR OS-80™	Ceteareth-80 C16-C18 R- (O-CH ₂ -CH ₂) 80-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. HLB 18.5. Well soluble in water. Low foaming properties. Effective dispersant, solubilizer and oil-in-water emulsifier. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - emulsifier, dispersant and solubilizer for cosmetics; - stabilizer for the degradation of granular enzymes when surfactants are applied to the surface; - a binder for granulation and tableting; - industrial and household cleaning and detergents.
SINTANOR mix OS-25 and NORPEG 4000™	Cetearet-25 (C16-C18) and PEG-4000	A mixture of non-ionic surfactants. Well soluble in water and ethanol. Ideal for creating stable oil-in-water emulsions even at room temperature. Creates stable formulations of preparations in which the active substance is present in solid form. Provides very good dispersion of the active substance in the final product.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - antistatic agent and leveler for dyeing in the textile industry.
Product OS-20 A™	A mixture of polyoxyethylene glycol ethers EO20 of higher fatty alcohols (C16-C18) for the chemical industry R- (O-CH ₂ -CH ₂) x-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. HLB 15.9. Well soluble in soft and hard water, benzene, ethanol. Poorly soluble in hydrocarbon tetrachloride, diethyl ether, white spirit. Suspension stabilizer, emulsifier, oil-soluble co-emulsifier, dispersant, wetting agent.	Acidic, neutral and alkaline products for water of any hardness: - a component of technical cleaning compositions; - synthetic detergents for washing.

Trademark	Structure, chemical name	Physicochemical properties	Application
Product OS-20 B™	A mixture of polyoxyethylene glycol ethers EO20 of higher fatty alcohols (C16-C18) for the textile industry R- (O-CH₂-CH₂) x-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C16 - 22-32%, C18 - 66-76%	Non-ionic surfactant. HLB 15.9. Well soluble in soft and hard water, benzene, ethanol. Poorly soluble in hydrocarbon tetrachloride, diethyl ether, white spirit. Suspension stabilizer, emulsifier, oil-soluble co-emulsifier, dispersant, wetting agent. Leveler for dyeing with vat dyes. Antistatic for processing synthetic fibers.	Acidic, neutral and alkaline products for water of any hardness: - antistatic agent, lubricant and leveling agent for dyeing in the textile industry; - additive to prevent clogging of dies in viscose production.
SINTANOR 7C MB™	Cocket-7 (C12-C18) R- (O-CH₂-CH₂) 7-OH, where R is the alkyl radical of higher fatty alcohols obtained from palm kernel oil, C10 <3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%. RSPO certificate	Non-ionic surfactant. HLB 12.9. Well soluble in water. Possesses high detergent, wetting, degreasing, emulsifying and dispersing properties. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - bleaching agents for the textile industry; - detergents for baths after dyeing; - liquids for hand washing dishes; - means for washing, care and hair styling; - decorative cosmetics (bases, concealers, eye shadow); - means for washing and care of the face (gels for washing the face, peels, creams); - lotions and gels for washing the body; - hand creams; - preparations for shaving and after shaving.
SINTANOR 7C™	Cocket-7 (C12-C18) R- (O-CH₂-CH₂) 7-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C10 < 3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%	Non-ionic surfactant. HLB 12.9. Well soluble in water. Possesses high detergent, wetting, degreasing, emulsifying and dispersing properties. Stable in solutions of mineral acids, alkalis and salts, as well as in hard water. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: - synthetic detergents for washing; - bleaching agents for the textile industry; - detergents for baths after dyeing; - liquids for hand washing dishes; - means for washing, care and hair styling; - decorative cosmetics (bases, concealers, eye shadow); - means for washing and care of the face (gels for washing the face, peels, creams); - lotions and gels for washing the body; - preparations for shaving and after shaving.

Trademark	Structure, chemical name	Physicochemical properties	Application
STENOR K36™	PEG-36 castor oil	Non-ionic surfactant. HLB 12.5. Well soluble in water, ethanol, isopropanol and n-propanol. Dispersible in propylene glycol. Insoluble in white spirit. Low foam, stabilizes and improves the foam structure. Effective solubilizer and emulsifier for oils, essential waxes and organic solvents. Increases the stability of oil-in-water emulsions. Dermatologically "soft" surfactant.	Neutral, slightly acidic or slightly alkaline water or water-alcohol based products: – dispersant, emulsifier and solubilizer of fragrances, oils, oil extracts and essential waxes for cosmetics; – emulsifier and solubilizer for the production of microemulsion household chemicals; – emulsifier and solubilizer in alkaline industrial cleaners; – dispersant and solubilizer of concentrated emulsions of pesticides containing calcium salt of ABSA.
STENOR K40™	PEG-40 hydrogenated castor oil	Non-ionic surfactant. GLB 14-16. Well soluble in water, ethanol, isopropanol and n-propanol. Dispersible in propylene glycol. Insoluble in white spirit. Low foam, stabilizes and improves the foam structure. Increases the stability of oil-in-water emulsions. Dermatologically "soft" surfactant. Shows conditioning properties. An effective solubilizer and emulsifier of essential oils, oil extracts, fragrances, oil-soluble vitamins in cosmetic and perfumery products. The recommended dosage is 1-2 g of surfactant per 1 g of hydrophobic additive.	Neutral, slightly acidic or slightly alkaline water or water-alcohol based products: – preparations for washing, care and hair styling; – cosmetics for washing and caring for body and face skin; – cosmetics for make-up and make-up remover; – preparations for coloring and removing hair dye; – aftershave eau de toilette, perfumes and other alcohol-based preparations; – sunscreen preparations; – liquids and gels for intimate hygiene; – protective preparations for the lips; – anti-acne drugs.

Trademark	Structure, chemical name	Physicochemical properties	Application
STENOR K455™	PEG-40 hydrogenated castor oil / propylene glycol / water	Non-ionic surfactant. GLB 14-16. Well soluble in water, ethanol, isopropanol and n-propanol. Insoluble in white spirit. Low foam, stabilizes and improves the foam structure. Increases the stability of oil-in-water emulsions. Dermatologically "soft" surfactant. Shows conditioning properties. An effective solubilizer and emulsifier of essential oils, oil extracts, fragrances, oil-soluble vitamins in cosmetic and perfumery products. The recommended dosage is 1-2 g of surfactant per 1 g of hydrophobic additive. The liquid form and low pour point facilitate the technological use of surfactants.	Neutral, slightly acidic or slightly alkaline water or water-alcohol based products: – preparations for washing, care and hair styling; – cosmetics for washing and caring for body and face skin; – cosmetics for make-up and make-up remover; – preparations for coloring and removing hair dye; – aftershave eau de toilette, perfumes and other alcohol-based preparations; – sunscreen preparations; – liquids and gels for intimate hygiene; – protective preparations for the lips; – anti-acne drugs.
STENOR 24XO™	PPG-1 Lauret-7 RO- (CH ₂ -CH ₂ -O) 7-CH (CH ₃) -CH ₂ -OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 12. Let's well dissolve in water. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Wetting agent. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Medium-strength surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – floor cleaning products; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – peroxide bleaches; – means for caring for textile coverings of car interiors; – alkaline metal cleaners.

Trademark	Structure, chemical name	Physicochemical properties	Application
STENOR 23E4P5™	PPG-5 C12-C13 Paret-4 $\text{RO- (CH}_2\text{-CH}_2\text{-O) 4- (CH (CH}_3\text{) -CH}_2\text{-O) 5H,}$ where R is the alkyl radical of synthetic fatty alcohols, C12-C13	Non-ionic surfactant. HLB 10.7. Low foaming and defoaming properties below room temperature in relation to hydrophilic surfactants and protein foams. Emulsifies when dissolved in water, readily soluble in water in the presence of hydrotropes, for example, sodium cumene sulfonate. They do not react with hardness salts, as well as with soluble alkali metal salts, anionic polymers (CMC) or polycarboxylates. Stable and soluble in 20% hydrochloric acid solution, in 60% phosphoric acid solution, in 60% acetic acid. Stable, but insoluble in 30% sodium hydroxide solution and 25% ammonium hydroxide solution. Good wetting of surfaces, including plastic. Excellent solubilizer and oil-in-water emulsifier.	Low-foam cleaners for strongly acidic, neutral and strongly alkaline media in water of any hardness: – low-foam cleaners for cleaning and industrial cleaning; – means for automatic dishwashing and rinse aid; – detergents for machine washing of bottles; – floor cleaning products; – CIP cleaning products; – alkaline metal cleaners; – wetting agent and emulsifier in surface cleaners prior to electroplating; – stain removers for pigment and oil stains.
STENOR 24E4P5™	PPG-5 Lauret-4 $\text{RO- (CH}_2\text{-CH}_2\text{-O) 4- (CH (CH}_3\text{) -CH}_2\text{-O) 5H,}$ where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, C12 - 68-78%, C14 - 20-30%	Non-ionic surfactant. HLB 10.5. Low foaming and defoaming properties below room temperature in relation to hydrophilic surfactants and protein foams. Emulsifies when dissolved in water, readily soluble in water in the presence of hydrotropes, for example, sodium cumene sulfonate. They do not react with hardness salts, as well as with soluble alkali metal salts, anionic polymers (CMC) or polycarboxylates. Stable and soluble in 20% hydrochloric acid solution, in 60% phosphoric acid solution, in 60% acetic acid. Stable, but insoluble in 30% sodium hydroxide solution and 25% ammonium hydroxide solution. Good wetting of surfaces, including plastic. Excellent solubilizer and oil-in-water emulsifier.	Low-foam cleaners for strongly acidic, neutral and strongly alkaline media in water of any hardness: – low-foam cleaners for cleaning and industrial cleaning; – means for automatic dishwashing and rinse aid; – detergents for machine washing of bottles; – floor cleaning products; – CIP cleaning products; – alkaline metal cleaners; – wetting and emulsifying agent in surface cleaners prior to electroplating.

Trademark	Structure, chemical name	Physicochemical properties	Application
STENOR 25P15E25™	PPG-15 / PEG-25 C12-C15 alcohols RO- (CH ₂ -CH ₂ -O) 25- (CH (CH ₃) -CH ₂ -O) 15H, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB about 11. Soluble in water. Low foaming properties. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Wetting agent. Emulsifier and stabilizer for direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – alkaline metal cleaners; – acidic cleaners to remove hardness salts and metal oxide deposits; – reagents for oil production.
STENOR 25P15E10™	PPG-15 / PEG-10 C12-C15 alcohols RO- (CH ₂ -CH ₂ -O) 10- (CH (CH ₃) -CH ₂ -O) 15H, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB about 8. When dissolved in water, forms a white emulsion. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Dispersant. Emulsifier of inverse emulsions w / o (water in oil). Wetting agent. Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – emulsifier of mineral oils and oil-soluble co-emulsifier in detergents and cleaning agents; – reagent for oil production.
STENOR 25P15E5	PPG-15 / PEG-5 C12-C15 alcohols RO- (CH ₂ -CH ₂ -O) 5- (CH (CH ₃) -CH ₂ -O) 15H, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB about 4. Dissolve in hydrophobic solvents such as oils. In aqueous solutions, it emulsifies with the formation of a rapidly exfoliating white emulsion. Emulsifier and stabilizer for water-in-oil inverse emulsions. Defoamer. Recommended for emulsifying "heavy" waxes, paraffins, high molecular weight oils, polypropylene glycols. Does not react in aqueous solutions with hardness salts. Stable in aqueous solutions of oxidizing agents.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – emulsifier of mineral oils and oil-soluble co-emulsifier in detergents and cleaning agents; – antifoam; – reagent for oil production.
STEAROX 6	PEG-6 Monostearate / Cetareth-20 A mixture of polyoxyethylene glycol ethers EO6 of stearic acid with the addition of 5-10% of the preparation OS-20	A mixture of non-ionic surfactants. See product description Stenor MS-6 and Preparation OS-20	Textile auxiliary. – gives a soft neck to semi-woolen, viscose and cotton fabrics; – serves as a finishing agent in the production of chemical fibers; – acts as an emulsifier for the composition of lubricants when spinning artificial fibers; – is an avivazhny means.

Trademark	Structure, chemical name	Physicochemical properties	Application
STENOR 67P15E5	PPG-15 / PEG-5 C16-C17 alcohols RO- (CH ₂ -CH ₂ -O) 5- (CH (CH ₃) -CH ₂ -O) 15H, where R is the alkyl radical of synthetic fatty alcohols C16-C17	Non-ionic surfactant. HLB about 4. Dissolves in hydrophobic solvents such as oils. Emulsifier and stabilizer for water-in-oil emulsions. Defoamer. Designed for emulsification of "heavy" high molecular weight oils, paraffins and waxes. Not sensitive to hard water. Stable over a wide pH range, in hard water and in the presence of oxidizing agents.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – emulsifier for mineral oils, paraffins and waxes; – oil-soluble co-emulsifier in detergents and cleaning agents; – antifoam; – reagent for oil production.
Oxyethylated rapeseed oil (ORM)	R-COO- (CH ₂ -CH ₂ O) nH, where R – alkyl radical of rapeseed oil fatty acids, n = 5-7	Non-ionic surfactant. HLB 15. Soluble in water and most polar solvents. Hydrophilic emulsifier, dispersant, antistatic agent, wetting agent, re-grease agent. Stabilizes and improves the quality of the foam. Refatting properties for fibers, hair and skin. Antistatic agent. Resistant to hydrolysis in a pH range of 4 to 9.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – degreaser in the leather industry; – a caring supplement for hand skin in hand dishwashing detergents and liquid hand soap; – emulsifier of direct emulsions; – finishing material for silk and wool; – anti-fogging agent for polymer films.

3. NEW SURFACTANTS "ZAVOD SYNTHANOLOV"
3.1. General characteristics and properties of products
Nonionic surfactants

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.), %	Hydroxyl number	Saponification number	w (H ₂ O), %
SINTANOR E3-9-11	C9 / C11 Paret-3 (R = C9 - 30-50%, C11 - 50-70%)	68439-45-2	≈ 100	Liquid colorless or yellowish, transparent or turbid at 25°FROM	6.0 - 8.0 for 1% in IPA solution: water (10: 6)	178 - 191	-	< 0.1
SINTANOR 7-12-15	C12-C15 Paret-7 (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68131-39-5	≈ 100	Slightly yellowish transparent liquid	-	103.9	-	< 0.1
SINTANOR 12-12-15	C12-C15 Paret-12 (R = C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%)	68131-39-5	≈ 100	From cloudy liquid to white pasty mass	6.0 - 8.0 for 1%	72 - 81	-	< 0.1
STENOR MO4	PEG-4 Monooleate	9004-96-0	≈100	Clear yellow liquid	5.0 - 7.0 for 5%	-	115 - 125	< 0.3
STENOR MO6	PEG-6 Monooleate	9004-96-0	≈100	Clear yellow liquid	6.0 - 8.0 for 5%	-	95 - 115	< 0.5
STENOR MO10	PEG-10 Monooleate	9004-96-0	≈100	Transparent viscous brown liquid	5.0 - 7.0 for 10%	-	-	< one
STENOR 20	PEG-20 Sorbitan monolaurate (Polysorbate 20)	9005-65-5	≈100	Transparent viscous liquid of yellow-brown color	-	-	40 - 50	≤ 3
STENOR 80	PEG-20 Sorbitan Monooleate (Polysorbate 80)	9005-65-6	≈100	Transparent viscous liquid of yellow-brown color	-	65 - 80	45 - 55	≤ 3
STENOR MC6	PEG-6 Monostearate	10108-28-8	≈100	Dense cream-colored mass	5.0 - 7.0 for 1%	-	99 - 107	< 0.3
STENOR HE	PEG-7 glyceryl cocoate	68201-46-7	≈100	Transparent yellow oily liquid	-	170 - 190	90 - 100	-
STENOR TA 2	PEG-2 C16-C18 tall oil unsaturated alkylamine	61791-26-2	≈100	Waxy yellow mass	9.0 - 11.0 for 1% solution ethanol: water (3: 7)	146 - 160	-	< one

Trademark	Chemical name	EU CAS No.	Active substance, %	Appearance	pH solution with w (sab.), %	Hydroxyl number	Saponification number	w (H ₂ O), %
STENOR TA 15	PEG-15 C16-C18 tall oil unsaturated alkylamine	61791-26-2	≈100	Dark brown transparent viscous liquid	9.0 - 11.0 for 1%	59.9 - 65.6	-	-
STENOR TA 30	PEG-30 C16-C18 tall oil unsaturated alkylamine	61791-26-2	≈100	Transparent viscous brown liquid	9.0 - 11.0 for 1%	35.4 - 37.3	-	< one
STENOR CA 2	PEG-2 Cocoamine	68439-72-5	≈100	Movable transparent liquid from light yellow to amber color	< 6 for 1%	-	-	< one
STENOR CA 8	PEG-8 Cocoamine	61791-14-8	≈100	Transparent, viscous liquid, amber color	9.0 - 11.0	133 - 136	-	< one
STENOR CA 15	PEG-15 Cocoamine	61791-14-8	≈100	Transparent, viscous liquid of dark color	9.0 - 11.0	61.0 - 65.0	-	< one
STENOR CA 18	PEG-18 Cocoamine	61791-14-8	≈100	Transparent, viscous liquid, amber color	8.0 - 9.0	72 - 76	-	< one

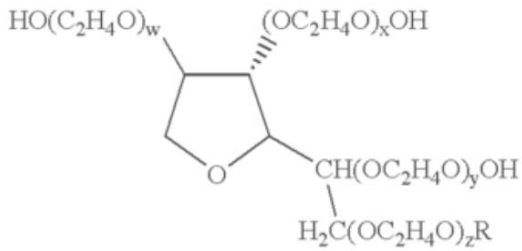
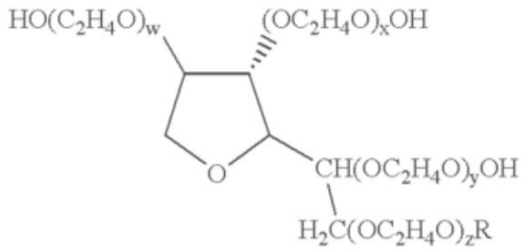
3.2. Structure, physical and chemical properties and application of products

Nonionic surfactants

Trademark	Structure, chemical name	Physiochemical properties	Application
SINTANOR E3-9-11	C9 / C11 Paret-3 R- (O-CH ₂ -CH ₂) 3-OH, where R is the alkyl radical of synthetic fatty alcohols, C9 - 30-50%, C11 - 50-70%	Non-ionic surfactant. HLB 10.1. When dissolved in water, it forms a white emulsion without a gelation step. Soluble in non-polar organic solvents. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Dispersant. Emulsifier of inverse emulsions w / o (water in oil). Wetting agent. Low-foaming surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – emulsifier of mineral oils and oil-soluble co-emulsifier in detergents and cleaning agents.

Trademark	Structure, chemical name	Physiochemical properties	Application
SINTANOR 7-12-15	C12-C15 Paret-7 R- (O-CH₂-CH₂) 7-OH, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB 12. Well soluble in water. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Wetting agent. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Medium-strength surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – means for hand washing dishes; – bleaching baths in the textile industry, – car care products; – means for cleaning metal surfaces.
SINTANOR 12-12-15	C12-C15 Paret-12 R- (O-CH₂-CH₂) 12-OH, where R is the alkyl radical of synthetic fatty alcohols, C12 - 19-25%, C13 - 28-34%, C14 - 27-33%, C15 - 15-21%	Non-ionic surfactant. HLB 14.5. Well soluble in water. Excellent resistance to hard water. High chemical stability over a wide pH range, from strongly acidic to strongly alkaline media. Emulsifier of direct emulsions o / w (oil in water). Detergent agent. Average surfactant. Stable in dilute oxidant solutions.	Strongly acidic, neutral and strongly alkaline products for water of any hardness, including those containing oxidizing agents: – liquid detergents and laundry detergents; – universal cleaning agents; – degreasers and stain removers for pigment-oil stains; – alkaline cleaners for the care of kitchen surfaces; – acidic bathroom cleaners; – means for hand washing dishes; – bleaching baths in the textile industry, – detergents for dyeing fabrics; – car care products.

Trademark	Structure, chemical name	Physiochemical properties	Application
STENOR MO4	PEG-4 Monooleate C17H33-COO- (CH2-CH2O) 4H	Non-ionic surfactant. HLB 4.5. It dissolves in aqueous solution to form an unstable emulsion. Well soluble in diethyl ether, ethanol, benzene, carbon tetrachloride. Poorly soluble in white spirit. Emulsifier of inverse emulsions of the water-in-oil type. Defoamer. Stable in the pH range from 4 to 9. In more acidic environments, reversible acid hydrolysis is observed, in more alkaline environments, irreversible saponification is observed.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – additive to detergents and cleansing compositions; – additive to avivazhny means in the textile industry; – antistatic additive for fabrics.
STENOR MO6	PEG-6 Monooleate C17H33-COO- (CH2-CH2O) 6H	Non-ionic surfactant. HLB 5.6. Emulsifies in aqueous solution. In hard water, the emulsion stratifies. Well soluble in diethyl ether, ethanol, benzene, carbon tetrachloride. Poorly soluble in white spirit. Effective emulsifier, dispersant, antistatic agent. Stable in the pH range from 4 to 9. In more acidic media, reversible acid hydrolysis is observed, in more alkaline media, irreversible saponification is observed.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – additive to detergents and cleansing compositions; – additive to avivazhny means in the textile industry; – antistatic additive for fabrics.
STENOR MO10	PEG-10 Monooleate C17H33-COO- (CH2-CH2O) 10H	Non-ionic surfactant. HLB 11.6. Emulsifies in aqueous solutions. Soluble in ethanol and xylene. Insoluble in n-hexane. Effective hydrophilic emulsifier. Stable in the pH range from 4 to 9. In more acidic media, reversible acid hydrolysis is observed, in more alkaline media, irreversible saponification is observed.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – emulsifier for pharmaceuticals; – additive to paints; – emulsifier for emulsion polymerization processes.

Trademark	Structure, chemical name	Physiochemical properties	Application
STENOR 20	PEG-20 Sorbitan monolaurate (Polysorbat-20)  where $w + x + y + z = 20$, $R = C_{11}H_{23}COO^-$ the residue of lauric acid obtained from coconut oil	Non-ionic surfactant. Soluble in water, isopropanol, ethanol, benzene, chloroform, vegetable and animal oils. It does not dissolve in mineral oils. Effective emulsifier and solubilizer of natural fats, oils, fragrances. Improves glide and softens the skin. Exhibits lubricating, defoaming, moisturizing, antistatic and conditioning properties. It is a viscosity modifier.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – in the composition of cosmetics as emulsifier and solubilizer of oils, a soothing agent for the skin, a hair growth stimulator (creams, shampoos, air fresheners, scrubs, foams, hydrophilic oils, face and hair masks, body sprays, etc.); – in the food industry as a food additive E 432, which is used to dissolve flavorings in fats, an antifoam agent in the production of fats, as an emulsifier and thickener, foam stabilizer (muffins, yoghurts, ice cream, margarine, butter, cream, baking fats, chewing gums and etc.). – in pharmacology, surfactants are used as a binder in vaccines, tablets, and vitamin preparations; – in the dough industry it is used as lubricant, softener and antistatic for fibers.
STENOR 80	PEG-20 Sorbitan Monooleate (Polysorbate 80)  where $w + x + y + z = 20$, $R = C_{17}H_{33}COO^-$ oleic acid residue	Non-ionic surfactant. Soluble in water, isopropanol, ethanol, benzene, chloroform, vegetable and animal oils. It does not dissolve in mineral oils. Effective emulsifier and solubilizer of natural fats, oils, fragrances. Improves glide and softens the skin. Exhibits lubricating, defoaming, moisturizing, antistatic and conditioning properties. It is a viscosity modifier.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – in the composition of cosmetics as emulsifier and solubilizer of oils, a soothing agent for the skin, a hair growth stimulator (creams, shampoos, air fresheners, scrubs, foams, hydrophilic oils, face and hair masks, body sprays, etc.); – in the food industry as a food additive E 433, which is used to dissolve flavorings in fats, an antifoam agent in the production of fats, as an emulsifier and thickener, foam stabilizer (muffins, yoghurts, ice cream, margarine, butter, cream, baking fats, chewing gums and etc.). – in pharmacology, surfactants are used as a binder in vaccines, tablets, and vitamin preparations; – in the dough industry it is used as lubricant, softener and antistatic for fibers.

Trademark	Structure, chemical name	Physiochemical properties	Application
STENOR MC6	PEG-6 Monostearate $C_{17}H_{35}COO-(CH_2CH_2O)_6H$	Non-ionic surfactant. HLB 6.8. In aqueous solution it emulsifies to form stable emulsions. In the presence of dilute solutions of sodium hydroxide and sodium chloride, surfactant emulsions are stable. In the presence of sulfuric acid and hardness salts, surfactant emulsions stratify. Emulsifier, dispersant, antistatic, wetting agent. Resistant to hydrolysis in a pH range of 4 to 9.	Weakly acidic, neutral and slightly alkaline products for water of any hardness: – avivage agent for viscose silk; – antistatic agent for polyacrylonitrile fibers; – softener for viscose fabrics; – leveler for dyeing and printing with acid dyes in the textile industry; – impregnating agent; – means for removing paint from paper mulature; – emulsifier in the cosmetic industry.
STENOR HE	PEG-7 glyceryl cocoate C12-C18 $\begin{array}{c} CH_2O(CH_2CH_2O)_xR \\ \\ CHO(CH_2CH_2O)_yR \\ \\ CH_2O(CH_2CH_2O)_zR, \end{array}$ where $x + y + z = 7$, and R is the residue of higher fatty acids obtained from vegetable oils, C10 < 3%, C12 - 48-58%, C14 - 18-24%, C16 - 8-12%, C18 - 11-15%	Non-ionic surfactant. HLB 13.5. Well soluble in water. Stable to hydrolysis in the pH range from 4 to 9. It has a high foaming ability and excellent wetting properties. Shows good hydrotropic and solubilizing properties. Dermatologically "soft" surfactant. Significantly reduces the irritating effect of anionic surfactants, including sodium lauryl sulfoethoxylate. It is an alternative to fatty ethoxylated alcohols. Possesses excellent detergency. Not labeled according to CLP requirements. The recommended concentration is 20-30% of the total content of anionic surfactants.	Foam eco-friendly cleaners for slightly acidic, neutral and slightly alkaline detergents for water of any hardness, without oxidants: – liquid detergents for washing, allowing you to remove light and heavy dirt; – hair shampoos; – shower gels; – bath foam; – liquid hand soap; – detergents for the care of the skin of babies and children.
STENOR TA 2	PEG-2 C16-C18 tall oil unsaturated alkylamine $HO-CH_2-CH_2-N(R)-CH_2-CH_2-OH$, where R is the alkyl radical of higher fatty alcohols obtained from tall oils, C12 – 1%, C14 – 4%, C16 – 31%, C18 – 64%	Non-ionic surfactant. Disperses when dissolved in water. Soluble in ethanol, isopropanol, propylene glycol, white spirit, xylene. Has a low foaming capacity. Effective emulsifier of inverse emulsions of the water-in-oil type. Acid thickener. Inhibitor of corrosion of metals in acidic environments. Stable in a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: – thickener for acidic agents; – water-in-oil inverse emulsifier; – anti-caking agent of paraffin compositions intended for the treatment of mineral fertilizers; – inhibitor of acid corrosion of metals; – intermediate for the production of ethoxylated amine oxides.

Trademark	Structure, chemical name	Physiochemical properties	Application
STENORT 15	PEG-15 C16-C18 tall oil unsaturated alkylamine H- (O-CH₂-CH₂) x-N (R) - (CH₂-CH₂-O) y-H, where R is the alkyl radical of higher fatty alcohols obtained from tall oils, x + y = 15, C12 – 1%, C14 – 4%, C16 – 31%, C18 – 64%	Non-ionic surfactant. Well soluble in water, ethanol, isopropanol, propylene glycol, xylene. Insoluble in white spirit and light aromatic hydrocarbons. Has an average foaming ability. Effective emulsifier for direct oil-in-water emulsions. Wetting agent. Inhibitor of corrosion of metals in acidic environments. Stable in a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: – low-foaming alkaline metal cleaners; – solvent-based industrial cleaners; – emulsifier of direct emulsions in reagents for oil production; – an emulsifier in preparations for treating agricultural plants.
STENOR TA 30	PEG-30 C16-C18 tall oil unsaturated alkylamine H- (O-CH₂-CH₂) x-N (R) - (CH₂-CH₂-O) y-H, where R is the alkyl radical of higher fatty alcohols obtained from tall oils, x + y = 30, C12 – 1%, C14 – 4%, C16 – 31%, C18 – 64%	Non-ionic surfactant. Well soluble in water, ethanol, isopropanol, propylene glycol, xylene. Insoluble in white spirit and light aromatic hydrocarbons. It has an average foaming ability. Effective solubilizer. Inhibitor of corrosion of metals in acidic environments. Stable over a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: – low-foaming alkaline metal cleaners; – solvent-based industrial cleaners; – solubilizer in reagents for oil production; – solubilizer in preparations for treating agricultural plants.
STENOR CA 2	PEG-2 Cocoamine C12-C18 HO-CH₂-CH₂-N (R) -CH₂-CH₂-OH, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils	Non-ionic surfactant. Disperses when dissolved in water. Let's dissolve in ethanol, isopropanol, propylene glycol, white spirit, xylene. Has a low foaming capacity. Effective emulsifier of inverse emulsions of the water-in-oil type. Acid thickener. Inhibitor of corrosion of metals in acidic environments. Stable over a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: – thickener for acidic agents; – water-in-oil inverse emulsifier; – inhibitor of acid corrosion of metals; – intermediate for the production of ethoxylated amine oxides.

Trademark	Structure, chemical name	Physiochemical properties	Application
STENOR CA 8	PEG-8 Cocoamine C12-C18 H- (O-CH₂-CH₂) x-N (R) - (CH₂-CH₂-O) y-H, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, x + y = 8	Non-ionic surfactant. Well soluble in water, ethanol, isopropanol, propylene glycol, xylene. Has an average foaming ability. Emulsifier for direct oil-in-water emulsions. Wetting agent. Inhibitor of corrosion of metals in acidic environments. Stable over a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: – solvent-based industrial cleaners; – alkaline cleaners for metals.
STENOR CA 15	PEG-15 Cocoamine C12-C18 H- (O-CH₂-CH₂) x-N (R) - (CH₂-CH₂-O) y-H, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, x + y = 15	Non-ionic surfactant. Let's well dissolve in water, ethanol, isopropanol, propylene glycol, xylene. Insoluble in white spirit and light aromatic hydrocarbons. Has an average foaming ability. Effective emulsifier for direct oil-in-water emulsions. Wetting and dispersing agent. Inhibitor of corrosion of metals in acidic environments. Stable in a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: - emulsifier and corrosion inhibitor in metalworking compositions; - an emulsifier in oil / oil additive formulations; - auxiliary material for the textile industry; - emulsifier in alkaline degreasers.
STENOR CA 18	PEG-18 Cocoamine C12-C18 H- (O-CH₂-CH₂) x-N (R) - (CH₂-CH₂-O) y-H, where R is the alkyl radical of higher fatty alcohols obtained from vegetable oils, x + y = 18	Non-ionic surfactant. Well soluble in water, ethanol, isopropanol, propylene glycol, xylene. Insoluble in white spirit and light aromatic hydrocarbons. Has an average foaming ability. Effective emulsifier for direct oil-in-water emulsions. Wetting and dispersing agent. Inhibitor of corrosion of metals in acidic environments. Stable over a wide pH range from strongly acidic to strongly alkaline media. In the presence of hydrogen peroxide, it is oxidized to the corresponding amine oxide.	Strongly acidic, neutral and strongly alkaline products for water of any hardness: - emulsifier and corrosion inhibitor in metalworking compositions; - an emulsifier in oil / oil additive formulations; - auxiliary material for the textile industry; - emulsifier in alkaline degreasers.

4. POLYETHYLENE GLYCOLS (PEG) AND POLYPROPYLENE GLYCOLS (PPG) Zavod sintanolov LLC
4.1. General characteristics and properties of products

Low molecular weight polyethylene glycols

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Kinematic. viscous, mm ² / s	w (H ₂ O), %	w (ash), %	T crystal., °C
NorPEG 100	Polyethylene glycol 100, PEG 100 25322-68-3	≈ 100	Colorless or yellowish liquid	90-110	5.0 - 7.5 for 5%	11 - 15 at 40±0.3°FROM	< 1.0	< 0.2	–
NorPEG 150	Polyethylene glycol 150, PEG 150 25322-68-3	≈ 100	Colorless or yellowish liquid	140-160	5.0 - 7.5 for 5%	16 - 20 at 40±0.3°FROM	< 1.0	< 0.2	–
NorPEG 200	Polyethylene glycol 200, PEG 200 25322-68-3	≈ 100	Colorless or yellowish liquid	180-220	5.0 - 7.5 for 5%	21 - 25 at 40±0.3°FROM	< 1.0	< 0.2	–
NORPEG 200M	Polyethylene glycol 200M, PEG 200M 25322-68-3	≈ 100	Liquid from yellow to brown	180-220	10.0 - 12.0 for 5%	21 - 25 at 40±0.3°FROM	< 1.0	< 0.2	–
NORPEG 300	Polyethylene glycol 300, PEG 300 25322-68-3	≈ 100	Colorless or yellowish liquid	270-330	5.0 - 7.5 for 5%	30 - 34 at 40±0.3°FROM	< 1.0	< 0.2	–
NORPEG 400	Polyethylene glycol 400, PEG 400 25322-68-3	≈ 100	Colorless or yellowish liquid	380-440	5.0 - 7.5 for 5%	39 - 45 at 40±0.3°FROM	< 1.0	< 0.1	–

High molecular weight polyethylene glycols

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Kinematic. viscosity at 99±0.3°C, mm ² / s	w (H ₂ O), %	w (ash), %	T crystal., °C
NORPEG 600	Polyethylene glycol 600, PEG 600 25322-68-3	≈ 100	White dense mass	550-650	5.0 - 7.5 for 5%	9 - 13	< 1.0	< 0.1	18 - 25

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Kinematic. viscosity at 99±0.3°C, mm ² / s	w (H ₂ O), %	w (ash), %	T crystal., °C
NORPEG 800	Polyethylene glycol 800, PEG 800 25322-68-3	≈ 100	White dense mass	750-850	5.0 - 7.5 for 5%	12 - 17	< 1.0	< 0.1	28 - 35
NORPEG 1000	Polyethylene glycol 1000, PEG 1000 25322-68-3	≈ 100	White dense mass	950- 1050	5.0 - 7.5 for 5%	16 - 22	< 1.0	< 0.1	35 - 41
NORPEG 1500	Polyethylene glycol 1500, PEG 1500 25322-68-3	≈ 100	Waxy white scales	1400- 1600	5.0 - 7.0 for 5%	27 - 35	< 1.0	< 0.1	43 - 48
NORPEG 2000	Polyethylene glycol 2000, PEG 2000 25322-68-3	≈ 100	Waxy white scales	1800- 2200	5.0 - 7.0 for 5%	38 - 45	< 1.0	< 0.1	48 - 53
NORPEG 4000	Polyethylene glycol 4000, PEG4000 25322-68-3	≈ 100	Waxy white scales	3500- 4500	5.0 - 7.0 for 5%	100 - 160	< 1.0	< 0.1	50 - 55
NORPEG 6000	Polyethylene glycol 6000, PEG6000 25322-68-3	≈ 100	Waxy white scales	5400- 6600	5.0 - 7.0 for 5%	260 - 340	< 1.0	< 0.1	53 - 57
NORPEG 8000	Polyethylene glycol 8000, PEG 8000 25322-68-3	≈ 100	Waxy white scales	7200 - 8800	5.0 - 7.0 for 5%	–	< 1.0	< 0.1	–
NORPEG 10000	Polyethylene glycol 10000, PEG 10000 25322-68-3	≈ 100	Waxy white scales	9300- 10200	5.0 - 7.0 for 5%	–	< 1.0	< 0.1	–

Polyethylene glycol waxes

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Dynamic visc., cps	w (H ₂ O), %	Pace. dropping, °FROM	Hydroxyl number, mg KOH / g
NORPEG Wax 1500V	Polymerization product of ethylene oxide with lower glycols, PEG 1500 25322-68-3	≈ 100	Waxy white scales	1500- 1600	5.0 - 7.0 for 5%	< 1000	< 1.0	> 40	70 - 75
NORPEG Wax 2000V	Polymerization product of ethylene oxide with lower glycols, PEG 2000 25322-68-3	≈ 100	Waxy white scales	1800- 2200	5.0 - 7.0 for 5%	< 1000	< 1.0	> 40	51 - 62
NORPEG wax 4000V	Polymerization product of ethylene oxide with lower glycols, PEG 4000 25322-68-3	≈ 100	Waxy white scales	3850- 4500	5.0 - 7.0 for 5%	< 1000	< 1.0	> 40	25 - 29
NORPEG wax 6000V	Polymerization product of ethylene oxide with lower glycols, PEG 6000 25322-68-3	≈ 100	Waxy white scales	5600- 6600	5.0 - 7.0 for 5%	< 1000	< 1.0	> 40	17 - 20
NORPEG wax 8000V	Polymerization product of ethylene oxide with lower glycols, PEG 8000 25322-68-3	≈ 100	Waxy white scales	7200 - 8800	5.0 - 7.0 for 5%	< 2000	< 1.0	> 40	13 - 16

Polypropylene glycols (PPG)

Trademark	Chemical name, CAS No.	w (main compone nts), %	Appearance	Kinematic viscosity at 40°C, cSt	Hydroxyl number, mg KOH / g	Chromaticity according to Pt-Co scale	w (H ₂ O), %	pH for 1% solution
POLYNOR P600	PPG-600 25322-69-4	≈ 100	Transparent viscous liquid	36 - 44	178 - 197	<50	< 0.2	–
POLYNOR P900	PPG-900 25322-69-4	≈ 100	Transparent viscous liquid	54 - 66	118 - 132	<50	< 0.2	–
POLYNOR P2000D	PPG-2000 25322-69-4	≈ 100	Colorless transparent viscous liquid	305 - 335 dynamic, at 25°C, mPa s	53.5 - 57.5	<50	< 0.08	5 - 7

Trademark	Chemical name, CAS No.	w (main components),%	Appearance	Kinematic viscosity at 40°C, cSt	Hydroxyl number, mg KOH / g	Chromaticity according to Pt-Co scale	w (H ₂ O),%	pH for 1% solution
POLYNOR P2850	PPG-2850 (alkaline) 25322-69-4	≈ 100	Viscous liquid from yellow to brown	180 - 300 dynamic, at 25°C, mPa s	36 - 44	–	< 0.2	–
POLYNOR P4000D	PPG-4000 25322-69-4	≈ 100	Colorless transparent viscous liquid	600 - 900 dynamic, at 25°C, mPa s	26.5 - 29.5	<50	< 0.05	5 - 7
POLYNOR P8000D	PPG-8000 25322-69-4	≈ 100	Colorless transparent viscous liquid	–	12.5 - 15.5	<50	< 0.05	5 - 7

4.2. Structure, physical and chemical properties and application of products

Polyethylene glycols

Trademark	Structure, chemical name	Physiochemical properties	Application
NorPEG 100	H–(O–CH ₂ –CH ₂ –) n–OH, where n ≈ 1.86 Polyethylene glycol 100, PEG 100	Hygroscopic viscous liquids miscible with water in any ratio. Soluble in most organic solvents, excluding paraffins. Stable in a wide pH range from strongly acidic to strongly alkaline media. They exhibit thermo-oxidative and thermal stability up to a temperature of 310° C. They are destroyed under the action of high-speed mixing and other shear effects. Oxidized by peroxides, hypochlorite and halogens. Salted out from aqueous solutions by boiling and adding high concentrations of electrolytes. They have high boiling points. They have lubricating properties, minimal corrosive activity and stable low viscosity over a wide temperature range, including severe frosts. They have low toxicity to living organisms.	Intermediate products for surfactant production –complex mono - and diesters of fatty acids (oleic, stearic, palmitic, etc.). In pharmacopoeia and cosmetics–binders for tablets, creams. Additive E1521 to food products, which functions as an antifoam, extraction solvent, emulsifier, water-retaining agent, thickener. Base for brake fluids. Textile auxiliaries for wet spinning, dye spraying, antistatic processing and fabric softening. Thickeners for hydraulic fluids. Evaporation stabilizers in aerosol products. Additives that facilitate the formation of products from rubber, rubber, ceramics, fibers and metals.
NorPEG 150	H–(O–CH ₂ –CH ₂ –) n–OH, where n ≈ 3.00 Polyethylene glycol 150, PEG 150		
NorPEG 200	H–(O–CH ₂ –CH ₂ –) n–OH, where n ≈ 4.14 Polyethylene glycol 200, PEG 200		

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG 200M	H-(O-CH ₂ -CH ₂ -) n-OH, where n≈ 4.14 Polyethylene glycol 200, PEG 200		
NORPEG 300	H-(O-CH ₂ -CH ₂ -) n-OH, where n≈ 6.41 Polyethylene glycol 300, PEG 300		
NORPEG 400	H-(O-CH ₂ -CH ₂ -) n-OH, where n≈ 8.68 Polyethylene glycol 400, PEG 400		

High molecular weight polyethylene glycols, polyethylene glycol waxes

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG 600	H(O-CH ₂ -CH ₂ -)nOH, where n≈13.23 Polyethylene glycol 600, PEG 600	Waxy solids. Mixed with water limited. The solubility of PEG in water decreases with increasing molecular weight. PEG 1000 forms saturated 75% aqueous solutions. PEG 10000 forms saturated 50% aqueous solutions. Soluble in most organic solvents, excluding paraffins, glycerin, glycols and diethyl ether. Stable in a wide pH range from strongly acidic to strongly alkaline media. They exhibit thermo-oxidative and thermal stability up to temperatures of 300° C. Destroyed by high-speed stirring and other shear loads. Oxidized in the presence of peroxides, hypochlorites and halogens. Salted out from aqueous solutions by boiling and adding high	Flocculants and coagulants in ore dressing. Means for separating and concentrating sediments, suspensions, paper pulp, coal dust. Highly effective agents for reducing the hydrodynamic resistance of viscous liquids, for example, additives in dishwashing gels, shampoos, toothpastes, injections. Water-soluble PEG films are used for packaging products, as well as for creating a precision seeding system, the so-called seed drill. In the oil industry as reagents that increase the efficiency of secondary oil recovery. In the paint and varnish industry as a binder and thickener for latexes and paints. As a basis for ion-conducting compositions in mixtures with inorganic salts. Raw materials for obtaining hydrogels by the crosslinking method. In pharmacopoeia and cosmetics –binder and hydrophilic base for tablets, creams, suppositories, lotions, pastes. Additive E1521 to food products, which functions as an antifoam, solvent,
NORPEG 800	H(O-CH ₂ -CH ₂ -)nOH, where n≈17.77 Polyethylene glycol 800, PEG 800		
NORPEG 1000	H(O-CH ₂ -CH ₂ -)nOH, where n≈22.32 Polyethylene glycol 1000, PEG 1000		
NORPEG 1500	H(O-CH ₂ -CH ₂ -)nOH, where n≈33.68 Polyethylene glycol 1500, PEG 1500		
NORPEG 2000	H(O-CH ₂ -CH ₂ -)nOH, where n≈45.05 Polyethylene glycol 2000, PEG 2000		
NORPEG 4000	H(O-CH ₂ -CH ₂ -)nOH, where n≈90.50 Polyethylene glycol 4000, PEG 4000		
NORPEG 6000	H(O-CH ₂ -CH ₂ -)nOH, where n≈135.95 Polyethylene glycol 6000, PEG 6000		
NORPEG 8000	H(O-CH ₂ -CH ₂ -)nOH, where n≈181.41 Polyethylene glycol 8000, PEG 8000		

NORPEG 10000	H(O-CH ₂ -CH ₂ -)nOH, where n≈226.86 Polyethylene glycol 10000, PEG 10000	concentrations of electrolytes. They have high boiling points. They have lubricating properties in solution and melt. They are characterized by minimal corrosive activity. They have plasticity. Capable of forming thin water-soluble films. They have low toxicity to living organisms.	emulsifier, water-retaining agent, thickener. As emulsifiers, dispersants, antistatic agents in the textile and leather industries; plasticizers in the pulp and paper industry; components of lubricating and cooling liquids; in the production of polyurethanes. For the restoration and conservation of wet wood, including archaeological finds. Material for the manufacture of biomembranes, polymer fibers; lithium polymer batteries; molds; elastomers; solid rocket fuel.
NORPEG Wax 1500V	H(O-CH ₂ -CH ₂ -)nOH, where n≈33.68 Polyethylene glycol 1500, PEG 1500		
NORPEG Wax 2000V	H(O-CH ₂ -CH ₂ -)nOH, where n≈45.05 Polyethylene glycol 2000, PEG 2000		
NORPEGWax 4000V	H(O-CH ₂ -CH ₂ -)nOH, where n≈90.50 Polyethylene glycol 4000, PEG 4000		
NORPEGWax 6000V	H(O-CH ₂ -CH ₂ -)nOH, where n≈135.95 Polyethylene glycol 6000, PEG 6000		
NORPEGWax 8000V	H(O-CH ₂ -CH ₂ -)nOH, where n≈181.41 Polyethylene glycol 8000, PEG 8000		

Polypropylene glycols (PPG)

Trademark	Structure, chemical name	Physiochemical properties	Application
POLYNOR P600	HO(-CH ₂ -CH (CH ₃)O-)nH, where n = 10.03 Polypropylene glycol 600, PPG-600	Viscous liquids at room temperature. Water solubility decreases rapidly with increasing molar mass. Stable in a wide pH range from strongly acidic to strongly alkaline media. Show thermal and thermo-oxidative stability up to temperatures of 200° C. They are destroyed under the action of high-speed mixing and other shear effects. Oxidized by peroxides, hypochlorite and halogens. Salted out from aqueous solutions when heated and electrolytes are added. They have high boiling points. Possesses lubricating properties and minimal corrosiveness. They have low freezing points.	Raw materials for the synthesis of non-ionic surfactants, polyurethanes, resins... Rheology modifiers–thickeners and additives that improve the fluidity of viscous fluids. Wetting agents, moisturizers and dispersants in leather finishing. The main components of the compositions in the manufacture of paintball balls. Basis for laxative drugs in the pharmaceutical industry. Defoamers in latex formulations, emulsion paints, in the production and processing of paper and cellulose. The basis for the manufacture of synthetic lubricants and plasticizers. Textile auxiliaries for wet spinning, dye spraying, antistatic processing and fabric softening. Additives for water and wastewater treatment. Components of industrial heat transfer fluids.
POLYNOR P900	HO (-CH ₂ -CH (CH ₃)O-)nH, where n = 15.21 Polypropylene glycol 900, PPG-900		
POLYNOR P2000D	HO (-CH ₂ -CH (CH ₃)O-)nH, where n = 34.17 Polypropylene glycol 2000, PPG-2000		
POLYNOR P2850	HO (-CH ₂ -CH (CH ₃)O-)nH, where n = 48.83 Polypropylene glycol 2850, PPG-2850		
POLYNOR R4000D	HO (-CH ₂ -CH(CH ₃) O-)nH, where n = 68.66 Polypropylene glycol 4000, PPG-4000		
POLYNOR R8000D	HO (-CH ₂ -CH (CH ₃) O-) nH, where n = 137.62 Polypropylene glycol 8000, PPG-8000		

5. METHOXYPOLYETHYLENE GLYCOLS (MPEG), UNSATCHED POLYETHYLENE GLYCOLS Zavod sintanolov LLC

5.1. General characteristics of products

Methoxy polyethylene glycols

Trademark	Chemical name, CAS No.	Active substance, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Crystal temperature, °C	w (H ₂ O), %	Hydroxyl number, mg KOH / g
NORPEG M200	Methoxypolyethylene glycol 200 900474-4	≈ 100	Colorless or yellowish liquid	-	11.0 - 12.0 for 5%	-	< 0.05	326 - 340
NORPEG M500	Methoxypolyethylene glycol 500 900474-4	≈ 100	Colorless or yellowish liquid	470 - 530	5.0 - 7.0 for 5%	-	< 0.1	106 - 119
NORPEG M750	Methoxypolyethylene glycol 750 900474-4	≈ 100	White or yellowish dense mass	700 - 800	5.0 - 7.0 for 5%	-	< 0.1	70 - 80
NORPEG M1000	Methoxy polyethylene glycol 1000 900474-4	≈ 100	White or yellowish dense mass	950-1050	5.0 - 7.0 for 5%	-	< 0.1	53 - 59
NORPEG M3000	Methoxypolyethylene glycol 3000 900474-4	≈ 100	Cloudy, colorless or yellowish liquid	2750-3050	4.0 - 8.0 for 5%	49.0 - 53.0	< 0.2	18 - 20

Unsaturated polyethylene glycols. Polyethylene glycol metal ethers

Trademark	Chemical name, CAS No.	Active substance, %	Appearance	Mav, g/mol	pH solution with w (sab.), %	Dynamic visc., cps	w (H ₂ O), %	Hydroxyl number, mg KOH/g
NORPEG H2400	Polyethylene glycol metal ether 31497-33-3	≈ 100	White to yellowish waxy scales	2200-2600	5.0 - 7.0 for 5%	-	< 0.5	22 - 26
NORPEG H2400-60	Polyethylene glycol metal ether 31497-33-3	59 - 61	Colorless or yellowish liquid	2200-2600	5.0 - 7.0 for 10%	-	38 - 40	22 - 26 (on Active substance-woo)
NORPEG N2400 B	Modified polyethylene glycol wax, polyethylene glycol metal ether 31497-33-3	≈ 100	White to yellowish waxy scales	2200-2600	5.0 - 7.0 for 5%	< 1000 at 99±0.3°C	< 1.0	22 - 26

Trademark	Chemical name, CAS No.	Active substance, %	Appearance	Mav, g/mol	pH solution with w (sab.), %	Dynamic visc., cps	w (H ₂ O), %	Hydroxyl number, mg KOH/g
NORPEG H3400	Polyethylene glycol metal ether 31497-33-3	≈ 100	White to yellowish waxy scales	3300-3600	5.0 - 7.0 for 5%	-	< 1.0	15 - 17
NORPEG H3400-60	Polyethylene glycol metal ether 31497-33-3	59-61	Colorless or yellowish liquid	3300-3600	5.0 - 7.0 for 10%	-	38 - 40	15 - 17 (Active substance)

Unsaturated polyethylene glycols. Polyethylene glycol isoprenyl ethers

Trademark	Chemical name, CAS No.	Active substance, %	Appearance	Mav, g / mol	pH solution with w (sab.), %	Color 25% solution, unit Hazena	w (H ₂ O), %	Hydroxyl number, mg KOH / g
NORPEG T2400	Polyether of unsaturated monohydric alcohol 31497-33-3	≈ 100	White to yellowish waxy scales	2200-2600	5.0 - 7.0 for 5%	<30	< 1.0	21.5 - 25.5
NORPEG T3400	Polyether of unsaturated monohydric alcohol 31497-33-3	≈ 100	White to yellowish waxy scales	3300-3600	5.0 - 7.0 for 5%	<30	< thirty	15 - 17

5.2. Structure, physical and chemical properties and application of products

Methoxy polyethylene glycols

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG M200	CH ₃ -(O-CH ₂ -CH ₂) _n -OH, where n = 3.82 Methoxypolyethylene glycol 200	Liquid or pasty substances. Mixed with water limited. Stable in a wide pH range from strongly acidic to strongly alkaline media. They exhibit thermo-oxidative and thermal stability up to temperatures of 300° C. Destroyed by high-speed stirring and other shear loads. Oxidized in the presence of peroxides, hypochlorites and halogens. Salted out from aqueous solutions by boiling	Designed for use in cosmetics, pharmacology, the production of cleaning and detergents, paint and varnish, metalworking and other industries as a binder, solvent, thinner, lubricant, base for creams and ointments. They are produced in two grades: Grade A is used in household chemicals, cosmetic and perfumery industries. Grade B in the construction industry in the production of concrete "superplasticizers"
NORPEG M500	CH ₃ -(O-CH ₂ -CH ₂) _n -OH, where n = 10.64 Methoxypolyethylene glycol 500		
NORPEG M750	CH ₃ -(O-CH ₂ -CH ₂) _n -OH, where n = 16.32 Methoxypolyethylene glycol 750		

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG M1000	CH ₃ - (O-CH ₂ -CH ₂ -)n-OH, where n = 22.00 Methoxy polyethylene glycol 1000	and adding high concentrations of electrolytes. They have high boiling points. They have lubricating properties in solution and melt. They are characterized by minimal corrosive activity.	mixtures
NORPEG M3000	CH ₃ - (O-CH ₂ -CH ₂ -)n-OH, where n = 67.45 Methoxypolyethylene glycol 3000		

Unsaturated polyethylene glycols. Polyethylene glycol metal ethers

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG H2400	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 = \text{C} - \text{CH}_2 - \text{O} - (-\text{CH}_2 - \text{CH}_2 - \text{O}-)_n - \text{H} \\ n \approx 52, \text{ polyethylene glycol metal ether} \end{array}$	Waxy solids. Soluble in water. Solutions containing 60% active substance are liquids. Stable in a wide pH range from strongly acidic to strongly alkaline media. They exhibit thermo-oxidative and thermal stability up to temperatures of 300° C. Destroyed by high-speed stirring and other shear loads. Oxidized in the presence of peroxides, hypochlorites and halogens. Salted out from aqueous solutions by boiling and adding high concentrations of electrolytes. They have high boiling points. They have lubricating properties in solution and melt. They are characterized by minimal corrosive activity.	Raw materials for the production of polycarboxylate esters used in construction chemistry, as a hyperplasticizing additive, in other industries as an emulsifier
NORPEG H2400-60	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 = \text{C} - \text{CH}_2 - \text{O} - (-\text{CH}_2 - \text{CH}_2 - \text{O}-)_n - \text{H} \\ n \approx 52, \text{ polyethylene glycol metal ether} \end{array}$		
NORPEG N2400 B	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 = \text{C} - \text{CH}_2 - \text{O} - (-\text{CH}_2 - \text{CH}_2 - \text{O}-)_n - \text{H} \\ n \approx 52, \text{ polyethylene glycol metal ether} \end{array}$		
NORPEG H3400	Polyethylene glycol metal ether $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 = \text{C} - \text{CH}_2 - \text{O} - (-\text{CH}_2 - \text{CH}_2 - \text{O}-)_n - \text{H} \\ n \approx 76, \text{ metal ether} \end{array}$		
NORPEG H3400-60	Polyethylene glycol metal ether $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 = \text{C} - \text{CH}_2 - \text{O} - (-\text{CH}_2 - \text{CH}_2 - \text{O}-)_n - \text{H} \\ n \approx 76, \text{ metal ether} \end{array}$		

Unsaturated polyethylene glycols. Polyethylene glycol isoprenyl ethers

Trademark	Structure, chemical name	Physiochemical properties	Application
NORPEG T2400	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2=\text{C}-\text{CH}_2-\text{CH}_2-\text{O}-(-\text{CH}_2-\text{CH}_2-\text{O}-)_n-\text{H} \\ n \approx 52, \text{ polyethylene glycol isoprenyl ether} \end{array}$	Waxy solids. Soluble in water. Stable in a wide pH range from strongly acidic to strongly alkaline media. Show thermo-oxidative and thermal stability up to temperatures of 280° C. Destroyed by high-speed stirring and other shear loads. Oxidized in the presence of peroxides, hypochlorites and halogens. Salted out from aqueous solutions by boiling and adding high concentrations of electrolytes. They have high boiling points. They have lubricating properties in solution and melt. They are characterized by minimal corrosive activity.	Raw materials for the synthesis of polycarboxylate ethers used as additives for concretes and mortars
NORPEG T3400	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2=\text{C}-\text{CH}_2-\text{CH}_2-\text{O}-(-\text{CH}_2-\text{CH}_2-\text{O}-)_n-\text{H} \\ n \approx 75, \text{ polyethylene glycol isoprenyl ether} \end{array}$		

6. POLYCARBOXYLATE ETHERS NORCHEM Polyethers LLC

6.1. General characteristics and properties of products

Trademark	Chemical name	w (main components), %	Appearance	pH solution with w (sab.), %	Dynamic viscosity at 25°C, mPa·c	Density at 25°C, g/cm ³
CARBOXYNOR NK 15	Polycarboxylate ether	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	5.0 - 8.0 for 5%	150 - 700	1.05 - 1.15
CARBOXYNOR Formix	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, slightly cloudy, viscous	5.0 - 8.0 for 5%	150 - 700	1.05 - 1.15
CARBOXYNOR BP 18	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	4.0 - 7.0 for 5%	300 - 700	1.09 - 1.11
CARBOXYNOR Optima 50	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	2.5 - 6.0 for 5%	150 - 500	1.09 - 1.11
CARBOXYNOR ST-19	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	2.5 - 6.0 for 5%	150 - 500	1.09 - 1.11

Trademark	Chemical name	w (main components), %	Appearance	pH solution with w (sab.), %	Dynamic viscosity at 25°C, mPa·c	Density at 25°C, g/cm ³
CARBOXYNOR ST-19M	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	2.5 - 6.0 for 5%	150 - 500	1.09 - 1.11
CarboxyNor TA 21	Polycarboxylate ester with special additives	49 - 51	Colorless or yellowish liquid, transparent or slightly cloudy, viscous	3.0 - 4.0 for 10%	200 - 400	1.09 - 1.11

6.2. Structure, physical and chemical properties and application of products

Trademark	Structure, chemical name	Dosage imparted properties	Application
CARBOXYNOR NK 15	Polycarboxylate ether	The range of recommended dosages is from 0.10 to 0.22% "dry" by weight of cement. The "vitality" of the cement paste on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.16% "dry" is about 35 minutes. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with smooth concrete strength gain; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – an increase in the strength characteristics of concrete by more than 15% (in equally mobile mixtures, including due to the water-reducing effect with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – reduction of cement consumption up to 10-15% while maintaining the strength characteristics of concrete (in equally mobile mixtures).	A complex additive (superplasticizer) that ensures the production of highly mobile mixtures and a smooth curing of concrete. The product is used in industrial and civil construction in the manufacture of reinforced concrete structures and products from heavy, light and fine-grained concrete

Trademark	Structure, chemical name	Dosage imparted properties	Application
CARBOXYNOR Formix	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.10 to 0.30% "dry" of the cement mass. The "vitality" of the cement paste on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.16% "dry" is about 30 minutes. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with an accelerated set of concrete strength; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – intensive (accelerated) strengthening of concrete (in equal-moving mixtures); – an increase in the strength characteristics of concrete by more than 23% (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – reduction of cement consumption by up to 20% while maintaining the strength characteristics of concrete (in equally mobile mixtures).	Complex additive (superplasticizer with the effect of accelerating hardening), which ensures the production of highly mobile mixtures without loss of early strength. The product is used in industrial and civil construction in the manufacture of reinforced concrete structures and products from heavy, light and fine-grained concrete
CARBOXYNOR BP 18	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.14 to 0.35% "dry" by weight of cement. The "vitality" of the concrete mixture on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.20% "dry" is more than 3.5 hours. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with smooth concrete strength gain; – concrete mix "lives" from 3 hours; – ensuring the cohesion and homogeneity (no segregation) of highly mobile concrete mixes; – an increase in the strength characteristics of concrete by 15% and more (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – the use of the copolymer in the compositions of multicomponent additives (the copolymer is stably mixed with other polycarboxylates, LST, defoamers, etc.).	A polyfunctional polymer that ensures the production of highly mobile mixtures with a long retention time of mobility (from 3 hours) with a smooth increase in concrete strength. The product is used in the production of superplasticizers for ready-mixed concrete mixtures for various purposes.

Trademark	Structure, chemical name	Dosage imparted properties	Application
CARBOXYNOR Optima 50	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.08 to 0.30% "dry" of the cement weight. "Vitality" of the concrete mixture on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.14% "dry" is about 1.5 hours. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with an intensive gain of concrete strength; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – an increase in the strength characteristics of concrete by more than 20% or more (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – excellent compatibility of the copolymer with other polycarboxylates in the composition of multicomponent additives	A polyfunctional polymer that ensures the production of highly mobile mixtures with an intensive build-up of concrete strength. The product is used in industrial and civil construction in the manufacture of reinforced concrete structures and products from heavy, light and fine-grained concrete
CARBOXYNOR ST-19	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.12 to 0.35% "dry" by weight of cement. "Vitality" of the concrete mixture on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.19% "dry" is more than 4 hours. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with smooth concrete strength gain; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – an increase in the strength characteristics of concrete by 15% and more (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – excellent compatibility of the copolymer with other polycarboxylates, LST, defoamers, etc. as part of multicomponent additives	A polyfunctional polymer that ensures the production of highly mobile mixtures with a long retention time of mobility (up to 4 hours) with a smooth increase in concrete strength. The product is used in the production of superplasticizers for ready-mixed concrete mixtures for various purposes.

Trademark	Structure, chemical name	Dosage imparted properties	Application
CARBOXYNOR ST-19M	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.12 to 0.35% "dry" by weight of cement. "Vitality" of the concrete mixture on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.19% "dry" is more than 4 hours. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with smooth concrete strength gain; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – an increase in the strength characteristics of concrete by 15% and more (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – excellent compatibility of the copolymer with other polycarboxylates, LST, defoamers, etc. as part of multicomponent additives	A polyfunctional polymer that ensures the production of highly mobile mixtures with an intensive build-up of concrete strength. The product is used in industrial and civil construction in the manufacture of reinforced concrete structures and products from heavy, light and fine-grained concrete
CARBOXYNOR TA 21	Polycarboxylate ester with special additives	The range of recommended dosages is from 0.12 to 0.35% "dry" by weight of cement. "Vitality" of the concrete mixture on Portland cement CEM I 42.5 B (NG = 27.0%) "Mordovcement" at a dosage of 0.19% "dry" is more than 4 hours. Properties: – an increase in the mobility of the concrete mixture from grade P1 to grade P5 with smooth concrete strength gain; – ensuring the cohesion and homogeneity (absence of segregation) of highly mobile concrete mixtures; – an increase in the strength characteristics of concrete by 15% and more (in equally mobile mixtures with a constant cement consumption); – increasing the water tightness and frost resistance of concrete (in equally mobile mixtures); – improving the quality of the front surface of products; – excellent compatibility of the copolymer with other polycarboxylates, LST, defoamers, etc. as part of multicomponent additives	A polyfunctional polymer that ensures the production of highly mobile mixtures with an intensive build-up of concrete strength. The product is used in industrial and civil construction in the manufacture of reinforced concrete structures and products from heavy, light and fine-grained concrete

7. Polyether Polyols NORCHEM Polyethers LLC
7.1. General characteristics and properties of products

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Color, iodine number	Acid number, mg KOH / g	Viscosity at 25°C, mPa·c	Hydroxyl number, mg KOH / g	Density at 20°C, g / cm ³	w (H ₂ O), %
POLYNOR PE-120M	Aliphatic polyester	≈ 100	Clear or opalescent oily liquid	< fifteen	< 1.0	450-460	85-120	1.02-1.05	< 0.1
POLYNOR – PE 180M	Complex oligoester	≈ 100	Clear or opalescent oily liquid	< fifteen	< 1.0	1200-1900	140 - 190	1.04-1.07	< 0.1
POLYNOR PE -150	Aromatic polyester	≈ 100	Clear or opalescent oily liquid	< fifteen	< 1.5	3000-4000	130-180	1.04-1.07	< 0.1
POLYNOR PE -210	Aromatic polyester of orthophthalic acid and polyethylene glycols	≈ 100	Clear oily liquid from dark yellow to light brown	< 100	< 1.5	1000-2000	200 - 215	1.20-1.21	< 0.1
POLYNOR PE -220	Aromatic polyester of orthophthalic acid and polyethylene glycols	≈ 100	Clear oily liquid	< 100	2-3	1000-2000	210 - 230	1.20-1.21	< 0.1
POLYNOR PE -250	Aromatic polyester of ortho- and terephthalic acid	≈ 100	Transparent liquid from dark yellow to light brown	< 100	< 2.0	3000-5000	225 - 250	1.20-1.21	< 0.1
POLYNOR PE -2501	Aromatic polyester of ortho- and terephthalic acid	≈ 100	Transparent liquid from dark yellow to light brown	< 100	< 2.0	3000-5000	225 - 250	1.20-1.21	< 0.1
POLYNOR PE -2502	Aromatic polyester of ortho- and terephthalic acid	≈ 100	Transparent liquid from dark yellow to light brown	< 100	< 2.0	3000-5000	225-250	1.20-1.21	< 0.1
POLYNOR PE -2503	Aromatic polyester of ortho- and terephthalic acid	≈ 100	Transparent liquid from dark yellow to light brown	< 100	< 2.0	3000-5000	225-250	1.20-1.21	< 0.1
POLYNOR PE -2505	Orthophthalic Acid Aromatic Polyester	≈ 100	Transparent liquid from dark yellow to light brown	< 100	< 2.0	3000-4000	220-250	1.20-1.21	< 0.1
POLYNOR PE -252	Mixture based on PE-2501 containing fire retardant and silicone stabilizer	≈ 87.5	Clear oily liquid	< 100	< 2.0	1800-3800	190-215	1.20-1.23	< 0.1
POLYNOR PE-310	Plant Based Aliphatic Polyester	≈ 100	Clear or opalescent oily liquid	< 100	< 2.0	400-700	290-330	1.04-1.07	< 0.1

Trademark	Chemical name, CAS No.	Active substanc e, %	Appearance	Color, iodine number	Acid number, mg KOH / g	Viscosity at 25°C, mPa·c	Hydroxyl number, mg KOH / g	Density at 20°C, g / cm ³	w (H ₂ O), %
POLYNOR PE-330	Plant Based Aliphatic Polyester	≈ 100	Clear or opalescent oily liquid	< 100	< 1.5	1200-2000	300-330	1.04-1.07	< 0.1
POLYNOR PE -3902	Plant Based Aliphatic Polyester	≈ 100	Clear or opalescent oily liquid	< 100	< 2.0	3500-5500	360-410	1.04-1.07	< 0.1
POLYNOR PE -390	Plant Based Aliphatic Polyester	≈ 100	Clear or opalescent oily liquid	< 100	< 2.0	4500-7500	390-450	1.04-1.07	< 0.1
POLYNOR PE -400	Plant Based Aliphatic Polyester	≈ 100	Transparent or slightly opalescent oily liquid	< 100	< 2.0	400-800	380-415	0.94-0.99	< 0.15
POLYNOR PE -2603	Orthophthalic acid aromatic polyester	≈ 100	Clear oily liquid	< five	< 2.0	9000-11000	230-250	1.20-1.21	< 0.1
POLYNOR PE -3000	Orthophthalic acid aromatic polyester	≈ 100	Clear oily liquid	< five	< 2.5	2500-3500	300-325	1.20-1.21	< 0.1

7.2. Structure, physical and chemical properties and application of products

Trademark	Chemical name	Structure	Application
POLYNOR PE -120M	Complex oligoester	Aliphatic EIT with secondary OH groups	Polyurethane foam
POLYNOR PE -180M	Complex oligoester	Aromatic EIT with secondary and primary OH groups	Polyurethane foam, periodic pouring
POLYNOR PE -150	Aromatic polyester	Aromatic EIT with secondary and primary OH groups	PU coverings, self-leveling floors
POLYNOR PE -210	Polyester of orthophthalic acid and polyethylene glycols	Highly active aromatic SPE with primary OH groups	Continuous casting, thermal insulation panels, sandwich panels, spraying
POLYNOR PE -220	Aromatic complex oligoester	Aromatic EIT with primary OH groups and moderate reactivity	Intermittent priming, pipe-in-pipe systems
POLYNOR PE -250	Complex polyester of ortho- and terephthalic acid	Aromatic SPE with primary OH groups and high reactivity	Continuous casting of PIR panels, spraying
POLYNOR PE -2501	Complex polyester of ortho- and terephthalic acid	Aromatic SPE with primary OH groups and high reactivity	Continuous casting of PIR panels, spraying
POLYNOR PE -400	Complex polyester	Aliphatic polyester based on natural raw materials	Budget PPE for periodic pouring and spraying

Trademark	Chemical name	Structure	Application
POLYNOR PE -2502	Complex polyester of ortho- and terephthalic acid	Aromatic EIT with primary OH groups and moderate reactivity	Continuous casting of PIR panels, spraying
POLYNOR PE -2503	Orthophthalic Acid Aromatic Polyester	SPE with primary OH groups and reduced reactivity	Continuous casting of PIR panels, spraying
POLYNOR PE -2505	Orthophthalic Acid Aromatic Polyester	SPE with primary and secondary OH groups and increased compatibility with hydrocarbon blowing agents	Low density continuous casting of PIR panels
POLYNOR PE -252	Mixture of PE-2501 with fire retardant and silicone	Aromatic SPE with primary OH groups and high reactivity, modified with mixed additives	Continuous casting of sandwich panels
POLYNOR PE -310	Aliphatic polyester	Linear PPE	XLPE to replace plain PE in rigid foam systems
POLYNOR PE -330	Aliphatic polyester	Branched EIT	XLPE to replace plain PE in rigid foam systems
POLYNOR PE -390	Aliphatic polyester	Strongly branched SPE	XLPE to replace plain PE in rigid foam systems
POLYNOR PE 3902	Aliphatic polyester	Strongly branched SPE	XLPE to replace plain PE in rigid foam systems
POLYNOR PE -2603	Aromatic polyester	Linear XLPE with high aromatic content	PPE for continuous and batch production of block foams
POLYNOR PE -3000	Aromatic complex oligoester	SPE with primary OH groups and reduced reactivity	General purpose PPE

8. VARNISHES AND RESINS NORCHEM Polyethers LLC
8.1. General characteristics and properties of products

Semi-finished alkyd pentaphthalic varnishes

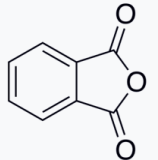
Trademark	Chemical name	Active substance, %	Appearance	Color, mg J2 / 100cm ³	Acid number, mg KOH / g	Conditional viscosity at 20±0.5°C, c	Coating hardness (pendulum A)	Drying time. at 20±2°C, h	Drying time. at 80±2°C, h
PF-053 Grade A	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	< 60	< 12	70 - 150	0.12	eighteen	1.5
PF-053 Mark B	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	< 130	<15	70 - 150	0.10	eighteen	1.5
PF-060 Grade A Top grade	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	< 10	< 12	70 - 150	0.12	24	2.0
PF-060 Grade A First grade	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	15 - 20	<15	70 - 150	0.12	24	2.0
PF-060 Grade B Top grade	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	30 - 60	<20	70 - 150	0.10	24	2.0
PF-060 Grade B First grade	Semi-finished alkyd pentaphthalic varnish	≈ 100	Clear or opalescent liquid	> 60	<20	70 - 150	0.10	24	2.0

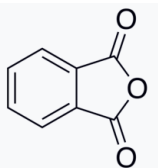
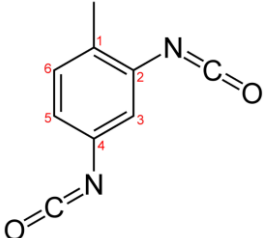
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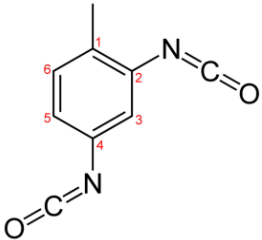
Trademark	Chemical name, CAS No.	w (non-volatile substances), %	Appearance	Color, mg J2 / 100cm ³	Nominal viscosity VZ-246 at 20±0.5°C, c	Coating hardness (pendulum A)		Drying time, h	
						48 h at 20±2°C	1 h at 80±2°C	at 20±2°C, h	at 80±2°C, h
UPFTal T-55-1	A solution of modified alkyd-urethane resin in organic solvents	49±2	Homogeneous transparent liquid without mechanical impurities	<20	60-180 (4 mm), 40-90 (6 mm)	0.25	0.30	four	one

Trademark	Chemical name, CAS No.	w (non- volatile substance s),%	Appearance	Color, mg J2 / 100cm ³	Nominal viscosity VZ- 246 at 20±0.5°C, c	Coating hardness (pendulum A)		Drying time, h	
						48 h at 20±2°C	1 h at 80±2°C	at 20±2°C, h	at 80±2°C, h
UPFTal T-55-2	A solution of modified alkyd-urethane resin in organic solvents	49±2	Homogeneous transparent liquid without mechanical impurities	<20	60-180 (4 mm), 40-90 (6 mm)	0.25	0.20	four	one

8.2. Structure, physical and chemical properties and application of products

Trademark	Structure, chemical name	Physiochemical properties	Application
Varnish PF-053	Varnish PF-053 semi-finished alkyd pentaphthalic is a solution in organic solvents of pentaphthalic resin modified with vegetable oil and rosin or distilled tallow oil	Important parameters of the finished varnish are color, purity, drying time and hardness of the resulting coating. A high-quality varnish should be light, free of mechanical impurities and rashes, dry quickly and, after drying, form a hard coating. The varnish is obtained by transesterification of vegetable oils with rosin or distilled tall oil with pentaerythritol  at 220–230 °C until an alcohol-soluble product is obtained. This product is then esterified with phthalic anhydride.  at 180-250 ° C. The reaction is controlled by the change in the content of carboxyl groups in the reaction mass, which is estimated by the acid number. In this case, there is a mandatory drying of the alkyd, i.e. removal of water from the reaction medium, which is formed in large quantities at the stage of polyesterification. The finished alkyd base is diluted with a solvent: xylene, toluene, solvent or their mixture with white spirit.	It is used as the main component - a binder in the manufacture of alacquer varnishes, enamels and primers. For example, varnishes: PF-283, PF-231 parquet, PF-170; enamels: PF-115, PF-266 for the floor, PF-1217 VE, PF-133; primers: GF-021, GF-0119 (despite the preserved marking of the primers "GF", for their manufacture they mainly use PF-053 varnish)

Trademark	Structure, chemical name	Physiochemical properties	Application
Varnish PF-060	Varnish PF-060 semi-finished alkyd pentaphthalic is a solution in organic solvents of pentaphthalic resin modified with vegetable oil or tall oil fatty acids	Important parameters of the finished varnish are color, purity, drying time and hardness of the resulting coating. A high-quality varnish should be light, free of mechanical impurities and rashes, dry quickly and, after drying, form a hard coating. Varnish Obtained by esterification of vegetable oils or tall oil fatty acids with pentaerythritol  at 220–230 °C until an alcohol-soluble product is obtained. This product is then esterified with phthalic anhydride.  at 180-250 °C. The reaction is controlled by the change in the content of carboxyl groups in the reaction mass, which is estimated by the acid number. In this case, there is a mandatory drying of the alkyd, i.e. removal of water from the reaction medium, which is formed in large quantities at the stage of polyesterification. The finished alkyd base is diluted with a solvent: xylene, toluene, solvent or their mixture with white spirit.	It is used as the main component - a binder in the manufacture of alacquer varnishes, enamels and primers. For example, varnishes: PF-283, PF-231 parquet, PF-170; enamels: PF-115, PF-266 for floor, PF-1217 VE, PF-133
Resin UPFTal T-55-1	Alkydurethane resin UPFTal T-55-1 is a solution in organic solvents of an alkyd resin obtained on polyhydric alcohol with a functionality of ~ 3.8 and modified with vegetable oil or fatty acids of tall oil and toluene diisocyanate	Alkyd-urethane paints and varnishes are characterized by accelerated drying, form a strong, abrasion-resistant coating, with high mirror gloss, increased hardness and improved decorative appearance, it is distinguished by high weather resistance, wear resistance, resistance to mechanical stress, resistance to static effects of various liquids, including aggressive ones. UPF resin Tal T-55-1 is a solution of pentaphthalic resin in organic solvents, modified with tall oil fatty acids or sunflower oil and toluene diisocyanate 	It is used in the manufacture of parquet varnish, alkyd-urethane quick-drying enamels, primers and other paints and varnishes. Coatings based on UPFTal T-55 resin are used in an open atmosphere in all climatic zones

Trademark	Structure, chemical name	Physiochemical properties	Application
Resin UPFTal T-55-2	Alkyd urethane resin UPFTal T-55-2 is a solution in white spirit of an alkyd resin obtained on polyhydric alcohol with a functionality of ~ 2.8 and modified with tall oil fatty acids and toluene diisocyanate	Alkyd-urethane paints and varnishes are characterized by accelerated drying, form a strong, abrasion-resistant coating, with high mirror gloss, increased hardness and improved decorative appearance, it is distinguished by high weather resistance, wear resistance, resistance to mechanical stress, resistance to static effects of various liquids, including aggressive... UPF resin Tal T-55-1 is a solution of glyphthalic resin in organic solvents, modified with tall oil fatty acids or sunflower oil and toluene diisocyanate 	It is used in the manufacture of parquet varnish, alkyd-urethane quick-drying enamels, primers and other paints and varnishes. Coatings based on UPFTal T-55 resin are used in an open atmosphere in all climatic zones;

9. PROCESS FLUIDS NORCHEM Polyethers LLC

9.1. General characteristics of products

Trademark	Chemical name	Appearance	Kinematic viscosity, mm ² /s	Boiling point, °C	pH	Interaction with metals at a temperature of (100 ± 2) °C for 120 h	Condition of rubber grade 51-1524 after exposure to liquid at a temperature of (125 ± 2) °C for 72 hours
HYDRAULIC FLUID "NOR-DOT"	Composition of polyethylene glycol monomethyl ethers, full boric acid esters and special additives	Transparent homogeneous liquid from light yellow to light brown, without sediment and mechanical impurities	Minus (40 ± 1) °C, no more than 1500; (50 ± 0.5) °C, at least 5; (100 ± 0.5) °C, at least 2	Dry liquid, not less than 260; moistened liquid, not lower than 160	7.5 - 9.0	No signs of corrosion in the form of dots, roughness visible to the naked eye, no crystalline sediment. Slight discoloration (tarnishing) is allowed	Samples of rubber and cuffs without stickiness, swelling and flaking

Trademark	Chemical name	Appearance	Density at 20°C, g / cm ³	Crystallization start temperature, °C,	pH	Mass fraction of water,%, no more	Mass fraction of borax,%, no more
REFRIGERANT	Water solution of glycols with anti-corrosion additive	Transparent, homogeneous liquid from colorless to yellow without mechanical impurities	1.065 - 1.100	not higher minus 65	7.5 - 10.5	35	2

9.2. Structure, physical and chemical properties and application of products

Trademark	Properties	Application
HYDRAULIC FLUID "NOR-DOT"	Hydraulic fluid "NOR-DOT" is an all-season fluid, used in all climatic zones of the country at ambient temperatures from + 50 ° C to minus 50 ° C. NOR-DOT hydraulic fluid is compatible with all glycol-based brake fluids, with Neva, Tom, ROSA, ROSDOT and Kapros-DOT fluids	Hydraulic fluid "NOR-DOT" is intended for use in hydraulic drives of machines and mechanisms.
REFRIGERANT	The refrigerant is used as a low-freezing coolant up to a temperature of at least minus 65 °C. The product contains a complex of anticorrosive additives	Designed for the production of cooling low-freezing liquids