

Here are your solutions classified by chemical Performance,
especially because Sanyo Chemical provides "Performance"
Through Chemistry.

Product Overview

Product Overview

"Performance" Through Chemistry.

[IMPORTANT]

- The values in this catalogue are representatives.
- Chemical structures and main components are described in common names of representative components of the products.
- Before handling these materials, refer to the current Safety Data Sheet (SDS) for recommended protective equipment, and detailed precautionary and hazards information.
- When you need individual brochure or SDS, please contact to our sales department.
Also SDS is available on our website.

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Sanyo Chemical Industries, Ltd.

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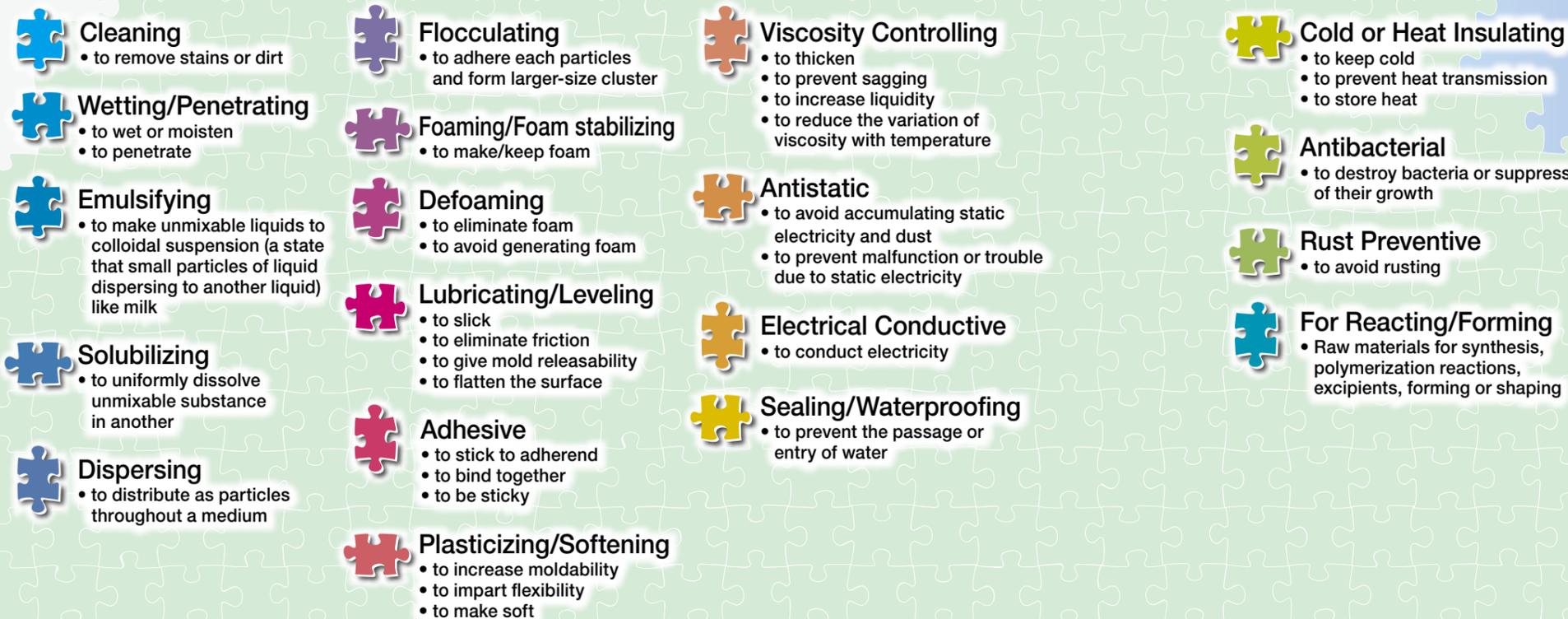


SANYO CHEMICAL INDUSTRIES, LTD.

**Sanyo
Chemical**

Sanyo Chemical provides
"Performance"
Through Chemistry

Our Products Respond to Diverse Needs by Various Performances



Sanyo Chemical Provides Various Performances (functions)

Design and Produce of Performance Chemicals

- Organic synthesis
- Polymerization
- Surface control, etc.

NeeSeeds-Oriented Approach

Technology diversification ; a technique developed to meet a certain need is combined with another technique to create another new seed technology for new products

Concurrent Engineering

A systematic approach to integrate accuracy and speed of time-to-market by simultaneous development through all processes in cooperation among R&D, production and engineering divisions

We provides diverse performances (functions) based on these strengths

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↓ The each page of the Performance (function) introduces our products to concern

Application Performance Page		Toiletries and Health Care					Petroleum and Automotives				Plastics and Textiles					Information & Electrics/ Electronics		Environmental Protection, Construction & Others			Polyurethanes*1		Application Performance
		Cosmetics (Hair care, Skin care)	Detergents, Softeners	Pharmaceuticals/ Quasi-Drugs/ Medical-Supplies	Food Manufacturing/ -Distribution	Agrichemicals/ Horticulture Supplies	Automobiles	Lubricants	Machinery/ Metals	Petroleum & Industries	Synthetic Resins & Rubbers	Adhesives	Paints /Coatings	Textiles	Paper Making	Printing/Ink	Electrics/ Electronics Parts	Housing/ Environmental Protection	Civil Engineering/ Construction	Others	Foam*2	Resins*3	
1 Cleaning	3	●	●	●								●	●		●							1 Cleaning	
2 Wetting/Penetrating	5	●	●	●		●						●	●	●	●			●				2 Wetting/ Penetrating	
3 Emulsifying	9	●	●	●	●	●		●	●	●		●	●	●								3 Emulsifying	
4 Solubilizing	13	●	●	●			●	●				●	●	●								4 Solubilizing	
5 Dispersing	15	●	●	●		●			●	●		●	●	●	●		●					5 Dispersing	
6 Flocculating	17												●			●						6 Flocculating	
7 Foaming/Foam stabilizing	19	●	●	●									●				●					7 Foaming/Foam stabilizing	
8 Defoaming	21	●		●	●			●	●	●				●								8 Defoaming	
9 Lubricating/Leveling	21	●	●	●				●	●	●							●					9 Lubricating/ Leveling	
10 Adhesive	25	●	●	●		●								●	●	●	●	●	●		●	10 Adhesive	
11 Plasticizing/Softening	29	●	●	●									●							●	●	11 Plasticizing/ Softening	
12 Viscosity Controlling	33	●	●	●				●						●			●					12 Viscosity Controlling	
13 Antistatic	35	●	●				●							●	●							13 Antistatic	
14 Electrical Conductive	37						●								●							14 Electrical Conductive	
15 Sealing/Waterproofing	37																●	●		●	●	15 Sealing/ Waterproofing	
16 Cold or Heat Insulating	37				●												●					16 Cold or Heat Insulating	
17 Antibacterial	39	●	●	●	●					●		●	●	●					●			17 Antibacterial	
18 Rust Preventive	39						●	●	●													18 Rust Preventive	
19 Other Functions	41		●	●										●					●			19 Other Functions	
20 For Reacting/Forming	41	●		●		●	●	●						●	●	●	●	●	●	●	●	20 For Reacting/ Forming	

* The compositions are described in common names of main components. Registered names for official compendia or for more details, please contact us.

*1 Polyurethanes:
Polyurethanes are produced through reactions of polyols with isocyanates.
Polyols (polyhydric alcohols) are such as polyether polyols (sometimes it may also refer to PPG as an acronym of polypropylene glycol for convenience), polyester polyols and polymer polyols.

*2 Foam:
Polyurethane Foam is a polyurethane matrix containing micro-pores or cells by blowing reaction.
It is used for seat cushioning materials, mattresses and heat insulators.

*3 Resins:
Polyurethanes excepting foam. They are used for sealants, caulking agents, water-proofing coatings, elastomers, synthetic leather, paintings, adhesives and so on.

We developed the first polyether polyols for polyurethane foam in Japan in 1960 under the trade name of SANNIX.
We have a world-class technology and a top-class production capacity in Japan, and therefore our PPG are used among polyurethane manufacturers not only in Japan, but also overseas.

1 Cleaning

to remove stains or dirt

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
BEAULIGHT LCA	Carboxylic-based anionic surfactants	Sodium polyoxyethylene lauryl ether carboxylate	p49	liquid, paste	<ul style="list-style-type: none"> Excellent foaming property, prevents excessive degreasing Low irritancy to eyes & skin Base material for weak acid hair shampoos & face washes 	
BEAULIGHT SHAA		Sodium [(2-hydroxydodecyl)-oxy] acetate	p49	liquid	<ul style="list-style-type: none"> Excellent foaming property and foam stability even under weak acidity Low irritancy to eyes & skin Base material for hair shampoos, body shampoos, facial cleansers Listed in the International Nomenclature Cosmetic Ingredient Name 	
BEAULIGHT ESS	Sulfosuccinate-based anionic surfactants	Disodium polyoxyethylene alkyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Excellent foaming property Low irritancy to eyes & skin, prevents excessive degreasing Base material for hair care products 	
BEAULIGHT SSS		Disodium laureth sulfosuccinate	p49	paste	<ul style="list-style-type: none"> Excellent foaming property and foam stability even under weak acidity Provides a pleasant feeling Low irritancy to eyes & skin, prevents excessive degreasing Base material for hair care products 	
NSA-400L	Carboxylic-based anionic surfactants	Polycarboxylate	-	liquid	<ul style="list-style-type: none"> Excellent calcium-ion trapping capability, high pH buffering & soil-dispersion abilities Builder for powdered detergent 	
SANDET EN, END	Sulfuric acid ester-based anionic surfactants	Sodium polyoxyethylene alkyl ether sulfate	p50	liquid	<ul style="list-style-type: none"> Excellent solubility to water, hard-water resistance, foaming property & detergency Low irritation to skin Detergent base/emulsifier for emulsion polymerization 	
BEAULIGHT NA-25S			p50	liquid	<ul style="list-style-type: none"> Low irritancy to eyes & skin because of its low content of sodium lauryl sulfate Base material for hair or body shampoos & detergents 	
PROFAN	Amide-based nonionic surfactants	Alkylol amide based surfactants	p51	liquid, solid, flake	<ul style="list-style-type: none"> Foaming agent, foam stabilizer, thickener & detergency enhancer liquid detergents & bactericidal detergents/rust preventive 	
PUREMEEL	Ether-based (Amine type) nonionic surfactants	Polyoxyalkylene alkyl amine	p52	liquid	<ul style="list-style-type: none"> Excellent detergency of fats & oils/low-temperature fluidity Liquid detergent base 	
NSA-17	Ether-based nonionic surfactants	Proprietary nonionic surfactant	-	powder	<ul style="list-style-type: none"> Reinforcing detergency of powdered detergents/fluidity improver for powder 	
EMULMIN AF-101		Polyoxyalkylene alkyl ether derived from synthetic alcohols	p52	liquid	<ul style="list-style-type: none"> The alkylene oxide adduct of natural higher alcohol (mainly myristyl alcohol) Suitable for powder detergents and liquid detergent bases because its pour point is low and the dissolution rate in cold water is fast 	
EMULMIN CS-100W		Polyoxyalkylene alkyl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> A liquid detergent base for clothing that has good biodegradability and excellent detergency 	
EMULMIN FL, HL		Polyoxyalkylene lauryl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> Exhibiting better low-temperature fluidity compared to other nonionic surfactants with the same HLB Detergent/emulsifier/dispersant/wetting agent/solubilizer 	  
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	 
EMULMIN NL, L		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be emulsifiers for emulsion polymerization 	 
EMULMIN No.		Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	



For shampoos



For kitchen detergents



For laundry

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
NAROACTY CL	Ether-based nonionic surfactants	Polyoxyalkylene alkyl ether derived from synthetic higher alcohol	p52	liquid, solid, flake, paste	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent detergency, emulsifiability Detergent base/detergent/emulsifier/dispersant/wetting agent 	
NAROACTY ID			p52	liquid	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent penetrating property Detergent base 	
SANNONIC TN SEDRAN FF, SF, SNP		Polyoxyalkylene alkyl ether derived from synthetic alcohols SANNONIC SS, DE-70 are Polyoxyethylene alkyl ether	-/ p52	liquid, paste	<ul style="list-style-type: none"> Low foaming property Excellent detergency Metal cleaners 	
SANNONIC FN, FNR, SS			p52 p53	liquid	<ul style="list-style-type: none"> SANNONIC FN: Excellent fluidity at low temperature SANNONIC SS: Excellent penetrating property Detergent/emulsifier/dispersant/wetting agent 	 
SANNONIC DE-70			p53	liquid	<ul style="list-style-type: none"> Excellent penetrating property Detergent base 	
CHEMICLEAN DLE-20			p53	liquid	<ul style="list-style-type: none"> Excellent detergency Household cleaners base Removing stubborn stains of electrical appliances, bathtubs, toilet tools 	
NEWPOL PE			p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	 
LAUROMACROGOL 100			p55	petrolatum jelly	<ul style="list-style-type: none"> Ethylene oxide adducts with narrow molecular weight distribution derived from natural alcohols Excellent penetrating property & detergency Corresponding to the Japanese Pharmacopoeias & exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing 	
IONET DL-200, DO, DS, MO, MS	Ester-based nonionic surfactants	Polyoxyethylene fatty acid diester or monoester	p56	liquid, solid	<ul style="list-style-type: none"> Offering a wide selection from lipophilic to hydrophilic products Emulsifier/dispersant/solubilizer/detergent base/fiber-leveling agent 	 
PIUSERIA AMC	Amino acid-type amphoteric surfactants	Sodium lauramino propionate	p57	liquid	<ul style="list-style-type: none"> Prevents itching caused by amino acid type shampoo. Suitable for shampoo and body soap Improves protection from skin troubles such as itching when combined with amino acid-based anionic surfactants Amino acid-type amphoteric surfactants derived from laurylamine 	
LEBON CIB GSS	Imidazolinium salt-based amphoteric surfactants	Alkyl carboxymethyl hydroxyethyl imidazolium betaine	p57	liquid	<ul style="list-style-type: none"> Low irritancy, excellent foaming property, foam stability, hard-water resistance Capable of imparting a moist feeling to hairs after washing Base material for hair shampoos & body shampoos, thickens by combination with anionic surfactants 	
LEBON 2000HG, 2000L, HC-30W, MY-30W, LD-36	Betaine-type amphoteric surfactants	(Look at the page by composition)	p57	liquid	<ul style="list-style-type: none"> Excellent foaming property & hard-water resistance Thickens by combination with anionic surfactants Base material for hair shampoos & body shampoos 	



For metal cleaners

2 Wetting/Penetrating

to wet or moisten
to penetrate

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANMORIN OT	Sulfosuccinate-based anionic surfactants	Sodium dioctyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Particularly excellent penetrating property among surfactants/excellent wettability to hydrophobic materials/wetting- & penetrating agent/dispersant & binder for granules/penetrating agent for agrichemical spreading/dispersant/emulsifier for emulsion polymerization Suitable for aqueous (water-soluble, emulsion) coatings 	
EMULMIN FL, HL	Ether-based nonionic surfactants	Polyoxyalkylene lauryl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> Exhibiting better low-temperature fluidity compared to other nonionic surfactants with the same HLB Detergent/emulsifier/dispersant/wetting agent/solubilizer 	 
EMULMIN No.			Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent



For coating agents

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
NAROACTY CL	Ether-based nonionic surfactants	Polyoxyalkylene alkyl ether derived from synthetic higher alcohols SANNONIC SS, DE-70, SANMORIN 11 are Polyoxyethylene alkyl ether	p52	liquid, solid, flake, paste	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent detergency, emulsifiability Detergent base/detergent/emulsifier/dispersant/wetting agent 	
NAROACTY ID			p52	liquid	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent penetrating property Detergent base 	
SANNONIC FN, FNR, SS			p52 p53	liquid	<ul style="list-style-type: none"> SANNONIC FN: Excellent fluidity at low temperature SANNONIC SS: Excellent penetrating property Detergent/emulsifier/dispersant/wetting agent 	  
SANNONIC DE-70			p53	liquid	<ul style="list-style-type: none"> Excellent penetrating property Detergent base 	
SANMORIN 11			p53	liquid	<ul style="list-style-type: none"> Particularly excellent penetrating property among surfactants Wetting- & penetrating agent 	
NEWPOL PE		p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 		
LAUROMACROGOL 100		p55	petrolatum jelly	<ul style="list-style-type: none"> Ethylene oxide adducts with narrow molecular weight distribution derived from natural alcohols Excellent penetrating property & detergency Corresponding to the Japanese Pharmacopoeias & exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing 		
NEWPOL 50HB, LB		p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/quenching oil for machinery & metals/emulsion-breaker/heating-medium 		
NEWPOL 75H-90000, V		p53 p54	liquid			
NEWPOL TL		p54	liquid	<ul style="list-style-type: none"> Excellent lubricating effect to skin & hair Wetting agent, moisturizer & viscosity modifier for cosmetics/defoaming agent 		
NEWPOL GP		p55	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer/raw material for surfactant & synthetic lubricant/releasing lubricant 	 	
NEWPOL PP		p52	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer for cosmetics/raw material for cosmetics, surfactant & synthetic lubricant/releasing lubricant 	 	
TG-C		Ester-based nonionic surfactants	Glyceryl monostearate	p56	flake	<ul style="list-style-type: none"> Nonionic emulsifier and emollient derived from 100% natural raw materials, offering excellent emulsifying properties Softener, emulsifier, solubilizer, moisturizer & oiliness improver, creams, lotions & quasi drugs Lubricant & stabilizer of sustained drug releasing agents, tablets, pills & capsules of medicine
IONET S	Sorbitan mono- or di-fatty acid ester		p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	 
IONET T	Polyoxyethylene sorbitan monofatty acid ester		p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	  



For skincare lotions

List by Performance (Function)

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
POLYSORBATE 80	Ester-based nonionic surfactants	Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 	
METHACRYLATE	Methacrylate/Acrylate-based	Long-chain alkyl methacrylate or dialkylaminoalkyl methacrylate derivatives	p62	liquid	<ul style="list-style-type: none"> Good copolymerizability with other vinyl monomers Polymer modifier/imparting hydrophilicity, antistatic or adsorptive property/drainage & retention aid in paper making processes/polymer flocculant/electrodialysis or reverse osmosis membrane/ion-exchange resin/paper strengthening agent 	

3 Emulsifying

to make unmixable liquids to colloidal suspension (a state that small particles of liquid dispersing to another liquid) like milk

Beside, our subsidiary & affiliate; San Nopco Limited also provides related products (p79)

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
ELEMINOL JS-20	Sulfosuccinate-based anionic surfactants	Sodium alkyl allyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Reactive emulsifier for emulsion polymerization 	
SANMORIN OT		Sodium dioctyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Particularly excellent penetrating property among surfactants/excellent wettability to hydrophobic materials/wetting- & penetrating agent/dispersant & binder for granules/penetrating agent for agrichemical spreading/dispersant/emulsifier for emulsion polymerization Suitable for aqueous (water-soluble, emulsion) coatings 	
ELEMINOL CLS-20	Sulfuric acid ester-based anionic surfactants	Polyoxyalkylene alkyl ether ammonium sulfate	p49	liquid	<ul style="list-style-type: none"> Emulsifier for emulsion polymerization Suitable for large-particle-size emulsion polymerization 	
SANDET ONA		Sodium 2-ethylhexyl sulfate	p49	liquid		
ELEMINOL NS-5S		Nondisclosure	-	liquid	<ul style="list-style-type: none"> Emulsifier for emulsion polymerization 	
SANDET EN		Sodium polyoxyethylene lauryl ether sulfate	p50	liquid	<ul style="list-style-type: none"> Excellent solubility to water, hard-water resistance, foaming property & detergency Low irritation to skin Detergent base/emulsifier for emulsion polymerization 	
NAROACTY CL	Ether-based nonionic surfactants	Polyoxyalkylene alkyl ether derived from synthetic higher alcohols	p52	liquid, solid, flake, paste	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent detergency, emulsifiability Detergent base/detergent/emulsifier/dispersant/wetting agent 	
SANNONIC FN, FNR, SS		Polyoxyalkylene alkyl ether derived from synthetic higher alcohols SANNONIC SS is Polyoxyethylene alkyl ether	p52 p53	liquid	<ul style="list-style-type: none"> SANNONIC FN: Excellent fluidity at low temperature SANNONIC SS: Excellent penetrating property Detergent/emulsifier/dispersant/wetting agent 	
EMULMIN No.		Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	



For emulsifiers for emulsion polymerization

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
EMULMIN CCE-130	Ether-based nonionic surfactants	Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	solid	<ul style="list-style-type: none"> Emulsifier for emulsion polymerization, pigment dispersant for paint 	
EMULMIN CC		Polyoxyethylene cetyl ether derived from natural higher alcohols	p53	solid, wax	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
ELEMNOL HB-29		Polyoxyethylene tribenzyl phenyl ether	p53	liquid	<ul style="list-style-type: none"> Emulsion stabilizer for emulsion & latex 	
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN NL, L			p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be used as emulsifiers for emulsion polymerization 	
EMULMIN FL, HL		Polyoxyalkylene lauryl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> Exhibiting better low-temperature fluidity compared to other nonionic surfactants with the same HLB Detergent/emulsifier/dispersant/wetting agent/solubilizer 	
ELEMNOL 200L		Polyoxyethylene alkyl ether	p52	liquid	<ul style="list-style-type: none"> Emulsifier for emulsion polymerization 	
NEWPOL PE		Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
TG-C		Ester-based nonionic surfactants	Glyceryl monostearate	p56	flake	<ul style="list-style-type: none"> Nonionic emulsifier and emollient derived from 100% natural raw materials, offering excellent emulsifying properties Softener, emulsifier, solubilizer, moisturizer & oiliness improver, creams, lotions & quasi drugs Lubricant & stabilizer of sustained drug releasing agents, tablets, pills & capsules of medicine
IONET DL-200, DO, DS, MO, MS	Polyoxyethylene fatty acid diester or monoester		p56	liquid, solid	<ul style="list-style-type: none"> Offering a wide selection from lipophilic to hydrophilic products Emulsifier/dispersant/solubilizer/detergent base/fiber-leveling agent 	
IONET S	Sorbitan mono- or di-fatty acid ester		p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET T	Polyoxyethylene sorbitan monofatty acid ester		p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	
POLYSORBATE 80	Modified sorbitan		-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	



For milky lotions



For aqueous coating

4 Solubilizing

to uniformly dissolve unmixable substance in another

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
EMULMIN FL, HL	Ether-based nonionic surfactants	Polyoxyalkylene lauryl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> Exhibiting excellent low-temperature fluidity compared to other nonionic surfactants with the same HLB Detergent/emulsifier/dispersant/wetting agent/solubilizer 	
EMULMIN No.		Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	
EMULMIN CC		Polyoxyethylene cetyl ether derived from natural higher alcohols	p53	solid, wax	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN NL, L			p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be used as emulsifiers for emulsion polymerization 	
NEWPOL PE		Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
NEWPOL B-12		Polyoxyalkylene alkyl ether	p52	liquid	<ul style="list-style-type: none"> Excellent solubility of fats & oils Solvent of detergent 	
NEWPOL SBF		Polyoxyalkylene glycol monoether or borate	p52	liquid	<ul style="list-style-type: none"> High boiling point, excellent fluidity at low temperature Solvent for brake oils 	
TG-C		Ester-based nonionic surfactants	Glyceryl monostearate	p56	flake	<ul style="list-style-type: none"> Nonionic emulsifier and emollient derived from 100% natural raw materials, offering excellent emulsifying properties Softener, emulsifier, solubilizer, moisturizer & oiliness improver, creams, lotions & quasi drugs Lubricant & stabilizer of sustained drug releasing agents, tablets, pills & capsules of medicine
IONET DL-200, DO, DS, MO, MS	Polyoxyethylene fatty acid diester or monoester		p56	liquid, solid	<ul style="list-style-type: none"> Offering a wide selection from lipophilic to hydrophilic products Emulsifier/dispersant/solubilizer/detergent base/fiber-leveling agent 	
IONET S	Sorbitan mono- or di-fatty acid ester		p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET T	Polyoxyethylene sorbitan monofatty acid ester		p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	
POLYSORBATE 80	Modified sorbitan		-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	



To dissolve uniformly



As a solvent for detergents



For brake fluids

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 	
SANFINE DM-200	Others	Polyoxyethylene dimethyl ether	p62	liquid	<ul style="list-style-type: none"> Excellent solubility of fats & oils Solvent for detergent 	

5 Dispersing

to distribute as particles throughout a medium

Beside, our subsidiary & affiliate; San Nopco Limited also provides related products (p79)

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
CARRYBON L-400	Carboxylic-based anionic surfactants	Polycarboxylate	p49	liquid	<ul style="list-style-type: none"> Providing low-viscosity pigment slurry with high dispersion stability Dispersant for pigment slurry of water-soluble or emulsion coatings 	
TOXANON			-	liquid	<ul style="list-style-type: none"> Imparting excellent spreading property to agrichemical granules Excellent binding property/enhancing hardness of granules Dispersant & binder for agrichemical granules 	
SANMORIN OT	Sulfosuccinate-based anionic surfactants	Sodium dioctyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Particularly excellent penetrating property among surfactants/excellent wettability to hydrophobic materials/wetting- & penetrating agent/dispersant & binder for granules/penetrating agent for agrichemical spreading/dispersant/emulsifier for emulsion polymerization Suitable for aqueous (water-soluble, emulsion) coatings 	
NSA-17	Ether-based nonionic surfactants	Proprietary nonionic surfactant	-	powder	<ul style="list-style-type: none"> Reinforcing detergency of powdered detergents/fluidity improver for powder 	
EMULMIN No.		Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	
EMULMIN CCE-130		Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	solid	<ul style="list-style-type: none"> Emulsifier for emulsion polymerization, pigment dispersant for paint 	
EMULMIN CC		Polyoxyethylene cetyl ether derived from natural higher alcohols	p53	solid, wax	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN FL, HL		Polyoxyalkylene lauryl ether derived from natural higher alcohols	p52	liquid	<ul style="list-style-type: none"> Exhibiting better low-temperature fluidity compared to other nonionic surfactants with the same HLB Detergent/emulsifier/dispersant/wetting agent/solubilizer 	
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN NL, L		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be used as emulsifiers for emulsion polymerization 	
NEWPOL PE		Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	



For stabilization for drilling mud



To disperse of pigment slurry

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
NAROACTY CL	Ether-based nonionic surfactants	Polyoxyalkylene alkyl ether derived from synthetic higher alcohols	p52	liquid, solid, flake, paste	<ul style="list-style-type: none"> Alkylene oxide adducts with narrow molecular weight distribution Excellent detergency, emulsifiability Detergent base/detergent/emulsifier/dispersant/wetting agent 	
SANNONIC FN, FNR, SS		SANNONIC SS is Polyoxyethylene alkyl ether	p52 p53	liquid	<ul style="list-style-type: none"> SANNONIC FN: Excellent fluidity at low temperature SANNONIC SS: Excellent penetrating property Detergent/emulsifier/dispersant/wetting agent 	
IONET DL-200, DO, DS, MO, MS	Ester-based nonionic surfactants	Polyoxyethylene fatty acid diester or monoester	p56	liquid, solid	<ul style="list-style-type: none"> Offering a wide selection from lipophilic to hydrophilic products Emulsifier/dispersant/solubilizer/detergent base/fiber-leveling agent 	
IONET S		Sorbitan mono- or di-fatty acid ester	p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET T		Polyoxyethylene sorbitan monofatty acid ester	p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	
POLYSORBATE 80		Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	
SANWAX	Olefin or Styrene-based compounds	Low-molecular-weight polyethylene	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flattening agent/lubricant/fixing agent for agrichemicals 	
VISCOL		Low-molecular-weight polypropylene	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flattening agent/lubricant 	
UMEX		Acid modified polyolefin	p58	granule, powder, etc.	<ul style="list-style-type: none"> Dispersant for pigments, fillers & wood-flour/hot-melt adhesives Resin modifier for polyolefins (such as improving adhesion) 	
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
SANRETAN TIM-2011A	Urethane Series	Polyurethane solution (caprolactone type)	-	liquid	<ul style="list-style-type: none"> Forming tough film/excellent dispersibility of magnetic powders & hydrolysis resistance Caprolactone type Binder for magnetic tapes 	



For uniform coloring of plastics



For dispersion of abrasive polishing agents

6 Flocculating

to adhere each particles and form larger-size cluster

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
CATIOMER 300	Methacrylate/Acrylate-based	Water soluble cationic polymer	-	liquid	<ul style="list-style-type: none"> Organic coagulant for industrial wastewater treatment 	
SANFLOC AH, AS, N, NOP, SW		Anionic or Nonionic polyacryl amide	-	powder	<ul style="list-style-type: none"> Wastewater treatment Promotion of sedimentation filtration Applications for flocculation/sedimentation/filtering speed improver of organic flocculant 	



For flocculation/settling

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANFLOC C	Methacrylate/Acrylate-based	Acrylic cationic polymer	-	liquid, powder	<ul style="list-style-type: none"> Promotion of dewatering of organic sludge 	
METHACRYLATE		Long-chain alkyl methacrylate or dialkylaminoalkyl methacrylate derivatives	p62	liquid	<ul style="list-style-type: none"> Good copolymerizability with other vinyl monomers Polymer modifier/imparting hydrophilicity, antistatic or adsorptive property/drainage & retention aid in paper making processes/polymer flocculant/electrodialysis or reverse osmosis membrane/ion-exchange resin/paper strengthening agent 	
SANFLOC 700	Others	Dicyandiamide type cationic resin	-	liquid, powder	<ul style="list-style-type: none"> Organic coagulant Dyeing factory wastewater treatment/sludge and sewage treatment 	



For paper making



For wastewater treatment

7 Foaming/Foam stabilizing to make/keep foam

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
BEAULIGHT LCA	Carboxylic-based anionic surfactants	Sodium polyoxyethylene lauryl ether carboxylate	p49	liquid, paste	<ul style="list-style-type: none"> Excellent foaming property, prevents excessive degreasing Low irritancy to eyes & skin Base material for weak acid hair shampoos & face washes 	
BEAULIGHT SHAA		Sodium [(2-hydroxydodecyl)-oxy] acetate	p49	liquid	<ul style="list-style-type: none"> Excellent foaming property and foam stability even under weak acidity Low irritancy to eyes & skin Base material for hair shampoos, body shampoos, facial cleansers Listed in the International Nomenclature Cosmetic Ingredient Name 	
BEAULIGHT ESS	Sulfosuccinate-based anionic surfactants	Disodium polyoxyethylene alkyl sulfosuccinate	p49	liquid	<ul style="list-style-type: none"> Excellent foaming property Low irritancy to eyes & skin, prevents excessive degreasing Base material for hair care products 	
BEAULIGHT SSS		Disodium laureth sulfosuccinate	p49	paste	<ul style="list-style-type: none"> Excellent foaming property and foam stability even under weak acidity Provides a pleasant feeling Low irritancy to eyes & skin, prevents excessive degreasing Base material for hair care products 	
SANDET EN, END	Sulfuric acid ester-based anionic surfactants	Sodium polyoxyethylene alkyl ether sulfate	p50	liquid	<ul style="list-style-type: none"> Excellent solubility to water, hard-water resistance, foaming property & detergency Low irritation to skin Detergent base/emulsifier for emulsion polymerization 	
BEAULIGHT NA-25S			p50	liquid	<ul style="list-style-type: none"> Low irritancy to eyes & skin because of its low content of sodium lauryl sulfate Base material for hair or body shampoos & detergents 	
PROFAN	Amide-based nonionic surfactants	Alkylol amide based surfactants	p51	liquid, solid, flake	<ul style="list-style-type: none"> Foaming agent, foam stabilizer, thickener & detergency enhancer liquid detergents & bactericidal detergents/rust preventive 	
EMULMIN No.	Ether-based nonionic surfactants	Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	
EMULMIN CC		Polyoxyethylene cetyl ether derived from natural higher alcohols	p53	solid, wax	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN NL, L		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be used as emulsifiers for emulsion polymerization 	
FROTHMEISTER SP-10		Polyoxypropylene solbit	-	liquid	<ul style="list-style-type: none"> Generates fine foams having more resilient characteristic by combination with anionic surfactants which are used for shampoos & face washes Foam improver, foam stabilized of shampoos & body washes 	



For fine foaming

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
FROTHMEISTER HG-375	Ether-based nonionic surfactants	Polyoxyethylene polyoxypropylene hexyleneglycol ether	-	liquid	<ul style="list-style-type: none"> Generates fine foams having more resilient characteristic by combination with anionic surfactants which are used for shampoos & face washes Foam improver, foam stabilized of shampoos & body washes 	
FROTHMEISTER GC-48		Polyoxyethylene polyoxypropylene glyceryl ether	-	liquid		
PIUSERIA AMC	Amino acid-type amphoteric surfactants	Sodium lauramino propionate	p57	liquid	<ul style="list-style-type: none"> Prevents itching caused by amino acid type shampoo. Suitable for shampoo and body soap Improves protection from skin troubles such as itching when combined with amino acid-based anionic surfactants Amino acid-type amphoteric surfactants derived from laurylamine 	
LEBON CIB GSS	Imidazolium salt-based amphoteric surfactants	Alkyl carboxymethyl hydroxyethyl imidazolium betaine	p57	liquid	<ul style="list-style-type: none"> Low irritancy, excellent foaming property, foam stability, hard-water resistance Capable of imparting a moist feeling to hairs after washing Base material for hair shampoos & body shampoos, thickens by combination with anionic surfactants 	
LEBON 2000HG, 2000L, HC-30W, MY-30W, LD-36	Betaine-type amphoteric surfactants	(Look at the page by composition)	p57	liquid	<ul style="list-style-type: none"> Excellent foaming property & hard-water resistance Thickens by combination with anionic surfactants Base material for hair shampoos & body shampoos 	



For shampoo

8 Defoaming

to eliminate foam
to avoid generating foam

Beside, our subsidiary & affiliate; San Nopco Limited also provides related products (p79)

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
COLORIN	Ether-based nonionic surfactants	Polyoxyalkylene glycol or polyoxypropylene monobutyl ether	-	liquid	<ul style="list-style-type: none"> Defoaming agent for the fermentation industries Defoaming agent for other industrial use such as latex manufacturing process 	
NEWPOL 50HB, LB		Polyoxyethylene polyoxypropylene butyl ether, Polyoxypropylene butyl ether	p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/quenching oil for machinery & metals/emulsion-breaker/heating-medium 	
NEWPOL 75H-90000, V		Polyoxyethylene polyoxypropylene hexylene glycol ether, Polyoxyethylene polyoxypropylene polyol	p53 p54	liquid	<ul style="list-style-type: none"> Excellent lubricating effect to skin & hair Wetting agent, moisturizer & viscosity modifier for cosmetics/defoaming agent 	
NEWPOL TL		Polyoxyethylene polyoxypropylene trimethylolpropane	p54	liquid	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET S	Ester-based nonionic surfactants	Sorbitan mono- or di-fatty acid ester	p56	liquid, granule		



To defoam during process



To prevent foaming in coating

9 Lubricating/Leveling

to slick/to eliminate friction
to give mold releasability
to flatten the surface

Beside, our subsidiary & affiliate; San Nopco Limited also provides related products (p79)

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
ECONOL	Ammonium salt-based cationic surfactants	Alkyltrimethylammonium chloride	p50	liquid, solid	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
CATION DSV		Distearyldimethylammonium chloride	p51	flake	<ul style="list-style-type: none"> Imparting excellent flexibility & antistaticity to hair and fibers Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Softener for fabrics/hair conditioner & treatment base 	
LEBON TM-16		Cetyltrimethylammonium chloride	p50	liquid (crystallization in cold season)	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications	
LEBON TM-18	Ammonium salt-based cationic surfactants	Stearyltrimethyl ammonium chloride	p50	solid	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 		
CATION LQ		Ethyl sulfuric acid lanolin fatty acid aminopropylethyl dimethylammonium	p50	paste	<ul style="list-style-type: none"> Imparting excellent moisturizing, antistaticity & tactile property to hair/long-lasting softness & smoothness Hair conditioner & treatment base/shampoo with built-in conditioner In Japan, CATION LQ is approved for an exclusive use in cosmetics 		
CATION SF	Imidazolinium salt-based cationic surfactants	Imidazoline compound	p51	liquid to paste	<ul style="list-style-type: none"> Imparting excellent flexibility, antistaticity & water-absorbing effect Softener for fabrics 		
BLEMBER	Ether-based nonionic surfactants	Polyoxyalkylene alkyl ether	p52	liquid	<ul style="list-style-type: none"> Excellent lubricity, oil separation performance/low foaming property Water-soluble cutting oil base 	 	
NEWPOL PE		Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	 	
NEWPOL 50HB, LB		Polyoxyethylene polyoxypropylene butyl ether, Polyoxypropylene butyl ether	p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/ quenching oil for machinery & metals/emulsion-breaker/heating-medium 	 	
NEWPOL 75H-90000, V		Polyoxyethylene polyoxypropylene hexylene glycol ether, Polyoxyethylene polyoxypropylene polyol	p53 p54	liquid		 	
NEWPOL TL		Polyoxyethylene polyoxypropylene trimethylolpropane	p54	liquid	<ul style="list-style-type: none"> Excellent lubricating effect to skin & hair Wetting agent, moisturizer & viscosity modifier for cosmetics/defoaming agent 		
NEWPOL GEP-2800		Poly (oxyethylene, oxypropylene) glyceryl ether	p54	liquid	<ul style="list-style-type: none"> Polyether for brake oil base Provides lubricity, improves viscosity index, and increases residual evaporation components Lubricants, hydraulic oil raw material/base material for machinery and metal quenching oil/ demulsifier/heat medium 	 	
NEWPOL GP		Polypropylene triol	p55	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer/raw material for surfactant & synthetic lubricant/releasing lubricant 	 	
NEWPOL PP		Polypropylene glycol	p52	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer for cosmetics/raw material for cosmetics, surfactant & synthetic lubricant/releasing lubricant 	 	
TG-C		Ester-based nonionic surfactants	Glyceryl monostearate	p56	flake	<ul style="list-style-type: none"> Nonionic emulsifier and emollient derived from 100% natural raw materials, offering excellent emulsifying properties Softener, emulsifier, solubilizer, moisturizer & oiliness improver, creams, lotions & quasi drugs Lubricant & stabilizer of sustained drug releasing agents, tablets, pills & capsules of medicine 	
IONET DL-200, DO, DS, MO, MS			Polyoxyethylene fatty acid diester or monoester	p56	liquid, solid	<ul style="list-style-type: none"> Offering a wide selection from lipophilic to hydrophilic products Emulsifier/dispersant/solubilizer/detergent base/fiber-leveling agent 	
IONET S	Sorbitan mono- or di-fatty acid ester		p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/ machining oil/metalworking oil 	  	
IONET T	Polyoxyethylene sorbitan monofatty acid ester		p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	  	



For lubricant for fibers



For cutting oils

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
POLYSORBATE 80	Ester-based nonionic surfactants	Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	
SANWAX	Olefin-based compounds	Low-molecular-weight polyethylene	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flatting agent/lubricant/fixing agent for agrichemicals 	 
VISCOL		Low-molecular-weight polypropylene	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flatting agent/lubricant 	 
SANFRIC	Acids/Acid Anhydrides	Fatty acid formulation	p59	liquid	<ul style="list-style-type: none"> Friction reducer/anti-wear agent/lubricity improver for fuel oil 	 
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	 
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 	
ACLUBE	Methacrylate/Acrylate-based	Methacrylate copolymer & refined mineral oil	p62	liquid	<ul style="list-style-type: none"> Contributing to a reduction of fuel consumption to reduce the viscosity of lubricants depending on temperature Viscosity Index Improver/Viscosity Modifier (VII/VM) or pour point depressant for lubricants, hydraulic & engine oils/dewaxing aid during the production of lubricants 	
ACLUBE NS-100			-	liquid	<ul style="list-style-type: none"> Polymer additive for EV drive units (eAxle) offering excellent wear resistance and anti-seizure performance, also providing copper corrosion resistance, electrical insulation, and oxidative stability Contributes to reducing drive unit failure risk, improving gear sliding parts efficiency, and extending e-fluid service life 	



For lubricants

10 Adhesive

to stick to adherend
to bind together
to be sticky

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
TOXANON	Carboxylic-based anionic surfactants	Polycarboxylate	-	liquid	<ul style="list-style-type: none"> Imparting excellent spreading property to agrichemical granules Excellent binding property/enhancing hardness of granules Dispersant & binder for agrichemical granules 	
NEWPOL PE	Ether-based nonionic surfactants	Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
NEWPOL T-240U		Modified polyether	-	block	<ul style="list-style-type: none"> Freezing point (55-60°C)/slow dissolution to water Binder for aromatic deodorant toilet cleaner 	
POLYSORBATE 80	Ester-based nonionic surfactants	Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	



For excipients for tablets

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
CHEMITYLEN PEB-13ST	Esters	Bisphenol-A type unsaturated polyester	p58	powder	<ul style="list-style-type: none"> Binder for glass chopped strand mats for FRP 	
ACROBINDER BG-7	Olefin-based compounds	Butadiene & maleic acid copolymer	-	liquid	<ul style="list-style-type: none"> Binder for fiberglasses Especially suitable for FRTR (Fiber-Rainforced Thermo Plastic) 	
UMEX		Acid modified polyolefin	p58	granule, powder, etc.	<ul style="list-style-type: none"> Dispersant for pigments, fillers & wood-flour/hot-melt adhesives Resin modifier for polyolefins (such as improving adhesion) 	
DSA, PDSA-DA	Acids/Acid Anhydrides	Alkenyl succinic anhydride	p59	liquid	<ul style="list-style-type: none"> Imparting long pot life, excellent electrical insulating property, flexibility & bending strength to resins Epoxy curing agent/rust preventive/corrosion inhibitor 	
POLYMIDE L	Nitrogen-Containing Compounds	Polyamideamine	p59	liquid	<ul style="list-style-type: none"> Cured epoxy resin has rust prevention, excellent adhesion, toughness & flexibility Curing agent for epoxy resin used to coatings, adhesives, civil engineering & construction, laminating & casting materials, etc. 	
MELPOL F-220	Polyols	Isocyanate modified polyether	-	pellet	<ul style="list-style-type: none"> Aqueous solution has surface activating ability/forming flexible & elastic film Decomposing thermally at relatively low temperature & hardly-leaving ash after incineration Sizing agent for glass-fibers (warp-yarn)/water-soluble polymer 	
PEG		Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/ plasticizer & solubilizer for manufacturing medicine 	
SANNIX PL-2100, PP		Polyoxyethylene polyoxypropylene glycol/ Polyoxypropylene glycol	p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX GP		Polyoxypropylene triol	p61	liquid	<ul style="list-style-type: none"> Offering a wide selection of molecular weight The resulting foam has ideal balance of properties Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX TP-400		Trimethylolpropane-based polyether polyol	p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX SP-750		Polyoxypropylene sorbitol ether	p61	liquid		
CB-1	Methacrylate/ Acrylates-based	Acrylic resin	-	powder	<ul style="list-style-type: none"> Binder for injection molding ceramics High thermal decomposition Excellent shape retention and hardness of ceramics 	
POLYQUID		Methacrylic acid - ethyl acrylate copolymer	p62	liquid	<ul style="list-style-type: none"> Aqueous dispersion Enteric-soluble coating agent/masking pungency/binder for matrices Corresponding to Pharmacopoeias in the USA, Japan & some product are compatible to the ones in Europe 	
POLYTHICK	Methacrylate/ Acrylates-based	Acrylic resin or acrylic resin solution	p63	liquid	<ul style="list-style-type: none"> Excellent transparency/weather-, heat resistance Tackifier (pressure-sensitive adhesive) For various tapes (surgical, surface protection, electrical insulating, double-sided)/ paper making/automobile interiors/sealant for polypropylene bags 	
UPRENE UX-307	Urethane series	Polyurethane emulsion	p63	liquid	<ul style="list-style-type: none"> Forming film has excellent adhesion & water-resistance Adhesive for plastics, fabrics & woods/excels in adhesion with PVC sheet & plywood Unavailable for use directly brought into contact with the skins because of containing N-methyl pyrrolidone 	

Continued on the next page →



For adhesive tapes

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANPRENE H	Urethane series	Polyurethane solution	p63	liquid	<ul style="list-style-type: none"> Resulting film has excellent moisture permeability Adhesive layer & coating agent to skin layer for moisture permeable waterproofing cloth 	
SANRETAN TIM-2011A		Polyurethane solution (caprolactone type)	-	liquid	<ul style="list-style-type: none"> Forming tough film/excellent dispersibility of magnetic powders & hydrolysis resistance Caprolactone type Binder for magnetic tapes 	
POLYMEDICA		Two-component type polyurethane	-	liquid	<ul style="list-style-type: none"> Potting material for dialyzer & water purifiers 	 

11 Plasticizing/Softening

to increase moldability
to impart flexibility
to make soft

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
ECONOL	Ammonium salt-based cationic surfactants	Alkyltrimethylammonium chloride	p50	liquid, solid	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
LEBON TM-16		Cetyltrimethylammonium chloride	p50	liquid (crystallization in cold season)	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
LEBON TM-18		Stearyltrimethyl ammonium chloride	p50	solid		
CATION LQ		Ethyl sulfuric acid lanolin fatty acid aminopropylethyl dimethylammonium	p50	paste	<ul style="list-style-type: none"> Imparting excellent moisturizing, antistaticity & tactile property to hair/long-lasting softness & smoothness Hair conditioner & treatment base/shampoo with built-in conditioner In Japan, CATION LQ is approved for an exclusive use in cosmetics 	
CATION DSV		Distearyldimethylammonium chloride	p51	flake	<ul style="list-style-type: none"> Imparting excellent flexibility & antistaticity to hair and fibers Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Softener for fabrics/hair conditioner & treatment base 	
CATION SF	Imidazolinium salt-based cationic surfactants	Imidazoline compound	p51	liquid to paste	<ul style="list-style-type: none"> Imparting excellent flexibility, antistaticity & water-absorbing effect Softener for fabrics 	
NEWPOL PE	Ether-based nonionic surfactants	Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
TG-C	Ester-based nonionic surfactants	Glyceryl monostearate	p56	flake	<ul style="list-style-type: none"> Nonionic emulsifier and emollient derived from 100% natural raw materials, offering excellent emulsifying properties Softener, emulsifier, solubilizer, moisturizer & oiliness improver, creams, lotions & quasi drugs Lubricant & stabilizer of sustained drug releasing agents, tablets, pills & capsules of medicine 	 
IONET S		Sorbitan mono- or di-fatty acid ester	p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET T		Polyoxyethylene sorbitan monofatty acid ester	p56	liquid		<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink



For hair conditioners



For softeners

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications	
POLYSORBATE 80	Ester-based nonionic surfactants	Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 		
SANWAX	Olefin-based compounds	Low-molecular-weight polyethylene	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flattening agent/lubricant/fixing agent for agrichemicals 		
VISCOL		Low-molecular-weight polypropylene	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flattening agent/lubricant 		
DSA, PDSA-DA	Acids/Acid Anhydrides	Alkenyl succinic anhydride	p59	liquid	<ul style="list-style-type: none"> Imparting long pot life, excellent electrical insulating property, flexibility & bending strength to resins Epoxy curing agent/rust preventive/corrosion inhibitor 		
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	 	
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 		
SANNIX GP		Polyoxypropylene triol	p61	liquid	<ul style="list-style-type: none"> Offering a wide selection of molecular weight The resulting foam has ideal balance of properties Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	 	
SANNIX PL-2100		Polyoxyethylene polyoxypropylene glycol	p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	 	
SANNIX PP, TP-400		Polyoxypropylene glycol/Trimethylolpropane-based polyether polyol	p61	liquid		 	
NEWPOL BP		Bisphenol A-propylene oxide adduct	p60	liquid	<ul style="list-style-type: none"> Resulting resin has excellent corrosion resistance & flexibility Raw material for resins, organic-intermediate/modifier for resin 	 	
NEWPOL BPE		Bisphenol A-ethylene oxide adduct	p61	liquid, block, etc.		 	
SANFLEX EB	Ethers	Polyethyleneglycol dibenzoate	p58	liquid	<ul style="list-style-type: none"> Hardly bleeding out Plasticizer for polyurethane resin 	 	
SANFLEX GPA-3000, LUB		Polyether	p58/-	liquid		<ul style="list-style-type: none"> Inactive to isocyanate Hardly bleed out because of their blanched structures Plasticizer for polyurethane resin 	
MELPOL F-220		Polyether water-soluble polymer	-	pellet		<ul style="list-style-type: none"> Aqueous solution has surface activating ability/forming flexible & elastic film Decomposing thermally at relatively low temperature & hardly-leaving ash after incineration Sizing agent for glass-fibers (warp-yarn)/water-soluble polymer 	
METHACRYLATE	Methacrylate/Acrylate-based	Long-chain alkyl methacrylate or dialkylaminoalkyl methacrylate derivatives	p62	liquid	<ul style="list-style-type: none"> Good copolymerizability with other vinyl monomers Polymer modifier/imparting hydrophilicity, antistatic or adsorptive property/drainage & retention aid in paper making processes/polymer flocculant/electrodialysis or reverse osmosis membrane/ion-exchange resin/paper strengthening agent 		



For ointment



For plastics or rubbers

12 Viscosity Controlling

to thicken/to prevent sagging/to increase liquidity
to reduce the variation of viscosity with temperature

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
CARRYBON L-400	Carboxylic-based anionic surfactants	Polycarboxylate	p49	liquid	<ul style="list-style-type: none"> Providing low-viscosity pigment slurry with high dispersion stability Dispersant for pigment slurry of water-soluble or emulsion coatings 	
PROFAN	Amide-based nonionic surfactants	Alkylol amide based surfactants	p51	liquid, solid, flake	<ul style="list-style-type: none"> Foaming agent, foam stabilizer, thickener & detergency enhancer liquid detergents & bactericidal detergents/rust preventive 	
EMULMIN CC	Ether-based nonionic surfactants	Polyoxyethylene cetyl ether derived from natural higher alcohols	p53	solid, wax	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
NEWPOL PE		Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
EMULMIN LS		Polyoxyethylene lauryl ether derived from natural higher alcohols	p55	solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant 	
EMULMIN NL, L			p55	liquid, solid to paste	<ul style="list-style-type: none"> Hardly hydrolyzed even in the presence of acidity or alkalinity Detergent/emulsifier for creams & lotions/solubilizer/gelling & foaming agent/dispersant EMULMIN NL, L can be used as emulsifiers for emulsion polymerization 	
NEWPOL DDE-10		Polyoxyethylene lauryl glycol	p52	paste	<ul style="list-style-type: none"> Alkanediol derivative of dodecanediol in which about 1 mol ethylene oxide is adducted in average Low irritancy to eyes & skins Antibacterial-, antifungal-, thickening agent for hair shampoos, conditioners, cosmetics & detergents 	
NEWPOL 50HB, LB		Polyoxyethylene polyoxypropylene butyl ether, Polyoxypropylene butyl ether	p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/quenching oil for machinery & metals/emulsion-breaker/heating-medium 	
NEWPOL 75H-90000, V		Polyoxyethylene polyoxypropylene hexylene glycol ether, Polyoxyethylene polyoxypropylene polyol	p53 p54	liquid		
NEWPOL TL		Polyoxyethylene polyoxypropylene trimethylolpropane	p54	liquid	<ul style="list-style-type: none"> Excellent lubricating effect to skin & hair Wetting agent, moisturizer & viscosity modifier for cosmetics/defoaming agent 	
NEWPOL GEP-2800		Poly(oxyethylene, oxypropylene) glyceryl ether	p54	liquid	<ul style="list-style-type: none"> Polyether for brake oil base Provides lubricity, improves viscosity index, and increases residual evaporation components Lubricants, hydraulic oil raw material/base material for machinery and metal quenching oil/demulsifier/heat medium 	
EMULMIN 862		Polyoxyethylene distearate	p56	powder	<ul style="list-style-type: none"> Thickener, gelling agent for cosmetics, shampoos & hair conditioners 	
IONET S	Ester-based nonionic surfactants	Sorbitan mono- or di-fatty acid ester	p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	
IONET T		Polyoxyethylene sorbitan monofatty acid ester	p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	



To control viscosity of liquids

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
POLYSORBATE 80	Ester-based nonionic surfactants	Modified sorbitan	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	
SANWAX	Olefin-based compounds	Low-molecular-weight polyethylene	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flatting agent/lubricant/fixing agent for agrichemicals 	
VISCOL		Low-molecular-weight polypropylene	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flatting agent/lubricant 	
DSA, PDSA-DA	Acids/Acid Anhydrides	Alkenyl succinic anhydride	p59	liquid	<ul style="list-style-type: none"> Imparting long pot life, excellent electrical insulating property, flexibility & bending strength to resins Epoxy curing agent/rust preventive/corrosion inhibitor 	
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
MACROGOL			p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 	
ACLUBE	Methacrylate/Acrylate-based	Methacrylate copolymer & refined mineral oil	p62	liquid	<ul style="list-style-type: none"> Contributing to a reduction of fuel consumption to reduce the viscosity of lubricant depending on temperature Viscosity Index Improver/Viscosity Modifier (VII/VM) or pour point depressant for lubricants, hydraulic & engine oils/dewaxing aid during the production of lubricants 	



For fuel-saving engine oils

13 Antistatic

to avoid accumulating static electricity and dust
to prevent malfunction or trouble due to static electricity

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
PELESTAT PELECTRON	Olefin or Nylon-based compounds	Proprietary block copolymer	-	pellet	<ul style="list-style-type: none"> Imparting long-lasting excellent antistatic property independent of humidity Permanent antistatic agent for resins (preventing dust adhesion & troubles by static electricity, destruction of electronic circuit, electric shock & appliance malfunctions, etc.) Causing almost no resin deterioration/especially PELECTRON shows lower resistivity 	
CHEMISTAT	Anionic or nonionic surfactants	Proprietary nonionic surfactant	-	liquid, powder, etc.	<ul style="list-style-type: none"> Antistatic agent for synthetic resins Offering coating, kneading or reactive type 	
ECONOL	Ammonium salt-based cationic surfactants	Alkyltrimethylammonium chloride	p50	liquid, solid	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
LEBON TM-16		Cetyltrimethylammonium chloride	p50	liquid (crystallization in cold season)	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
LEBON TM-18		Stearyltrimethyl ammonium chloride	p50	solid	<ul style="list-style-type: none"> Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Hair conditioner & treatment base 	
CATION DSV		Distearyldimethylammonium chloride	p51	flake	<ul style="list-style-type: none"> Imparting excellent flexibility & antistaticity to hair and fibers Imparting smoothness, pliability & tenseness-stiffness finished feeling to hair Softener for fabrics/hair conditioner & treatment base 	



For protective films



To prevent dust



To avoid static electricity by brushing

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
CATION LQ	Ammonium salt-based cationic surfactants	Ethyl sulfuric acid lanolin fatty acid aminopropylethyl dimethylammonium	p50	paste	<ul style="list-style-type: none"> Imparting excellent moisturizing, antistaticity & tactile property to hair/long-lasting softness & smoothness Hair conditioner & treatment base/shampoo with built-in conditioner In Japan, CATION LQ is approved for an exclusive use in cosmetics 	
CATION SF	Imidazolinium salt-based cationic surfactants	Imidazoline compound	p51	liquid to paste	<ul style="list-style-type: none"> Imparting excellent flexibility, antistaticity & water-absorbing effect Softener for fabrics 	
NEWPOL PE	Ether-based nonionic surfactants	Polyoxyethylene polyoxypropylene glycol	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	 
SIPA, SIPM	Sodium-5-sulphoisophthalic acid/ 5-Sodium sulfo dimethyl isophthalate		p59	granule, liquid, powder	<ul style="list-style-type: none"> Imparting cationic dyability, hydrophilicity & antistatic property to polymers such as polyester, polyurethane & polyamide 	 
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	

14 Electrical Conductive to conduct electricity

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANELEK	Nitrogen-Containing Compounds	Amidine based electrolyte	-	liquid	<ul style="list-style-type: none"> Significant high degree of ionic dissociation/high electric conductivity High durability (less temperature-dependency of electric conductivity) Electrolyte for aluminum electrolytic capacitors 	 



For aluminum electrolytic capacitors

15 Sealing/Waterproofing to prevent the passage or entry of water

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANNIX	Polyols	Proprietary polyether polyol or polymer polyol	p60 p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	 



For waterproofing for roofs



For sealants

16 Cold or Heat Insulating to keep cold/to prevent heat transmission to store heat

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
NEWPOL 50HB, LB	Ether-based nonionic surfactants	Polyoxyethylene polyoxypropylene butyl ether, Polyoxypropylene butyl ether	p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/ quenching oil for machinery & metals/emulsion-breaker/heating-medium 	
NEWPOL 75H-90000, V		Polyoxyethylene polyoxypropylene hexylene glycol ether, Polyoxyethylene polyoxypropylene polyol	p53 p54	liquid		
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
SANNIX		Proprietary polyether polyol or polymer polyol	p60 p61	liquid		<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants)



For heat insulators of refrigerators



For heat insulators for houses

17 Antibacterial

to destroy bacteria or suppress of their growth

As for the antibacterial agents for drugs or quasi-drugs use, please contact to our Sales & Marketing Dept.

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
OSMORIN DA-50	Ammonium salt-based cationic surfactants	Didecyldimethylammonium adipate	p50	liquid	<ul style="list-style-type: none"> Halogen-free Germicide for industrial use (food factory, fiber processing), detergent for food factory/wood & metal-cleaning-bath preservative 	 
LEBON TM-16MS		Cetyltrimethylammonium -chloride, -methyl sulfate	p50	liquid	<ul style="list-style-type: none"> Having antibacterial & antifungal effect even at low concentration For industrial use such as germicides for food factory, public facilities/slime control of coolant/antibacterial treatment for fibers/fungicide for coatings/wood preservation 	 
GEM	Benzalkonium-based cationic surfactants	Benzalkonium chloride (special grade for medical use)	-	liquid	<ul style="list-style-type: none"> Powerful antibacterial effect Low odor Germicide exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing 	
CATION G-50		Benzalkonium chloride	p51	liquid	<ul style="list-style-type: none"> Wide spectrum antibacterial activities Germicide, detergent for food factory/germicide for industrial use 	
LEBON T-2	Amino acid-type amphoteric surfactants	Dodecylaminoethylaminoethyl-glycine/Alkyldiaminoethyl-glycine hydrochloride	p57	liquid, solid	<ul style="list-style-type: none"> Wide spectrum antibacterial activities/little deterioration of germicidal activity even in the presence of proteins Lower oval toxicity & skin irritancy compared to cationic antibacterial agents Germicides & detergents for food factory (industrial use) 	
NEWPOL DDE-10	Ether-based nonionic surfactants	Polyoxyethylene lauryl glycol	p52	paste	<ul style="list-style-type: none"> Alkanediol derivative of dodecanediol in which about 1 mol ethylene oxide is adducted in average Low irritancy to eyes & skins Antibacterial-, antifungal-, thickening agent for hair shampoos, conditioners, cosmetics & detergents 	



Without treatment



With treatment



For disinfectants

18 Rust Preventive

to avoid rusting

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANHIBITOR	Anionic or nonionic surfactants	Proprietary anionic or nonionic surfactant	-	liquid, paste	<ul style="list-style-type: none"> Rust inhibitor for machinery & metals 	 
	Acids/Acid Anhydrides	Alkenylsuccinic acid ester or Alkenylsuccinic anhydride	p59			 
PROFAN	Amide-based nonionic surfactants	Alkylol amide based surfactants	p51	liquid, solid, flake	<ul style="list-style-type: none"> Foaming agent, foam stabilizer, thickener & detergency enhancer for liquid detergents & bactericidal detergent/rust preventive 	
IONET S	Ester-based nonionic surfactants	Sorbitan mono- or di-fatty acid ester	p56	liquid, granule	<ul style="list-style-type: none"> SPAN type lipophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/defoaming agent Viscosity modifier for coatings & ink/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil 	 
IONET T		Polyoxyethylene sorbitan monofatty acid ester	p56	liquid	<ul style="list-style-type: none"> TWEEN type hydrophilic surfactants derived from plants Emulsifier/dispersant/wettability modifier/rust inhibitor/solubilizer/leveling agent & softener for fibers/lubricant/machining oil/metalworking oil Plasticizer for enteric-soluble coating agents, etc./ointment bases/viscosity modifier for coatings & ink 	 
DSA, PDSA-DA	Acids/Acid Anhydrides	Alkenyl succinic anhydride	p59	liquid	<ul style="list-style-type: none"> Imparting long pot life, excellent electrical insulating property, flexibility & bending strength to resins Epoxy curing agent/rust preventive/corrosion inhibitor 	 
POLYIMIDE L	Nitrogen-Containing Compounds	Polyamideamine	p59	liquid	<ul style="list-style-type: none"> Cured epoxy resin has rust prevention, excellent adhesion, toughness & flexibility Curing agent for epoxy resin used to coatings, adhesives, civil engineering & construction, laminating & casting materials, etc. 	 



Without rust preventive



With rust preventive

19 Other Functions

Product Name	Composition Classification	Principal Component	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
EMULMIN No.	Ether-based nonionic surfactants	Polyoxyethylene alkyl ether derived from natural higher alcohols	p53	liquid, solid, paste	<ul style="list-style-type: none"> Offering a wide selection from HLB (lipophilicity/hydrophilicity parameter)/biodegradable Detergent/emulsifier/dispersant/solubilizer/emulsifier for emulsion polymerization/gelling, foaming & wetting agent/oiliness improver Sulfation, phosphorylation base/pulp cooking aid/leveling, soaping agent 	
SANWAX	Olefin-based compounds	Low-molecular-weight polyethylene	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flattening agent/lubricant/fixing agent for agrichemicals 	
VISCOL		Low-molecular-weight polypropylene	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flattening agent/lubricant 	
SIPA, SIPM	Sodium-5-sulphoisophthalic acid/ 5-Sodium sulfo dimethyl isophthalate		p59	granule, liquid, powder	<ul style="list-style-type: none"> Imparting cationic dyability, hydrophilicity & antistatic property to polymers such as polyester, polyurethane & polyamide 	
PEG	Polyols	Polyethylene glycol	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
POLYQUID	Methacrylate/Acrylate-based	Methacrylic acid - ethyl acrylate copolymer	p62	liquid	<ul style="list-style-type: none"> Aqueous dispersion Enteric-soluble coating agent/masking pungency/binder for matrices Corresponding to Pharmacopoeias in the USA, Japan & some product are compatible to the ones in Europe 	

20 For Reacting/Forming

Raw materials for synthesis, polymerization reactions, excipients, forming or shaping

Beside, our subsidiary & affiliate; San-Petrochemicals Co., Ltd. also provides related products (p79)

Product Name	Principal Component	Application	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
TOXANON	Polycarboxylate	Excipient	-	liquid	<ul style="list-style-type: none"> Imparting excellent spreading property to agrichemical granules Excellent binding property/enhancing hardness of granules Dispersant & binder for agrichemical granules 	
SANMORIN OT	Sodium dioctyl sulfosuccinate	Excipient	p49	liquid	<ul style="list-style-type: none"> Particularly excellent penetrating property among surfactants/excellent wettability to hydrophobic materials/wetting- & penetrating agent/dispersant & binder for granules/penetrating agent for agrichemical spreading/dispersant/emulsifier for emulsion polymerization Suitable for aqueous (water-soluble, emulsion) coatings 	
NEWPOL PE	Polyoxyethylene polyoxypropylene glycol	Synthesis, Excipient	p54	liquid, flake, paste	<ul style="list-style-type: none"> Low foaming property Detergent base/detergent/raw-material for quasi-drugs (wetting agent/solubilizer/gelling agent/binder/coating agent, etc.)/fiber treating agent (lubricant/desizing agent)/emulsifier/dispersant/solubilizer/antistatic agent 	
NEWPOL 50HB, LB	Polyoxyethylene polyoxypropylene butyl ether, Polyoxypropylene butyl ether	Synthesis, Polymerization	p54 p55	liquid	<ul style="list-style-type: none"> Offering a wide selection from water-soluble to -insoluble products Wetting agent, moisturizer & viscosity controller/releasing lubricant/lubricant for machinery, metals & fabrics/defoaming agent/raw materials for lubricant, hydraulic oils/quenching oil for machinery & metals/emulsion-breaker/heating-medium 	
NEWPOL 75H-90000, V	Polyoxyethylene polyoxypropylene hexylene glycol ether, Polyoxyethylene polyoxypropylene polyol	Synthesis, Polymerization	p53 p54	liquid		
NEWPOL PP	Polyoxypropylene glycol	Synthesis, Polymerization	p52	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer for cosmetics/raw material for cosmetics, surfactant & synthetic lubricant/releasing lubricant 	
NEWPOL GP	Polyoxypropylene triol	Synthesis, Polymerization	p55	liquid	<ul style="list-style-type: none"> Non-volatile/low freezing point Wetting agent & moisturizer/raw material for surfactant & synthetic lubricant/releasing lubricant 	

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Product Name	Principal Component	Application	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
POLYSORBATE 80	Modified solbitan	Excipient	-	liquid	<ul style="list-style-type: none"> Derived from plants/no animal ingredients nor genetically-modified ingredients For pharmaceutical preparations (plasticizer/lubricant/solubilizer/wetting agent/emulsifier/thickener/dispersant/binder/base material/auxiliary disintegrant) Corresponding to the pharmacopoeias (JP, USP/NF, EP) (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) 	
PEG	Polyethylene glycol	Synthesis, Polymerization, Excipient	p60	liquid, wax, paste, flake, powder	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Low acute toxicity/low irritancy to eyes & skins Widely used in various applications 	
MACROGOL		Excipient	p60	liquid, flake, powder, paste	<ul style="list-style-type: none"> Compatible with skin/water-soluble & -retainable/non-volatile/free from greasiness Corresponding to the Japanese Pharmacopoeias & Pharmaceutical Excipients (Exclusively used in medical drug manufacturing/medical drug for exclusive use in manufacturing) Base material for ointments & suppositories/lubricant & binder for tablets or capsules/plasticizer & solubilizer for manufacturing medicine 	
METHACRYLATE	Long-chain alkyl methacrylate or dialkylaminoalkyl methacrylate derivatives	Polymerization	p62	liquid	<ul style="list-style-type: none"> Good copolymerizability with other vinyl monomers Polymer modifier/imparting hydrophilicity, antistatic or adsorptive property/drainage & retention aid in paper making processes/polymer flocculant/electrodialysis or reverse osmosis membrane/ion-exchange resin/paper strengthening agent 	
POLYQUID	Methacrylic acid - ethyl acrylate copolymer	Polymerization, Excipient	p62	liquid	<ul style="list-style-type: none"> Aqueous dispersion Enteric-soluble coating agent/masking pungency/binder for matrices Corresponding to Pharmacopoeias in the USA, Japan & some product are compatible to the ones in Europe 	
SANRAD	Acrylic compounds	Polymerization, Forming	-	liquid	<ul style="list-style-type: none"> UV-curable imprint resin with excellent scratch resistance and high-precision replication of fine patterns Offers high release properties while maintaining strong substrate adhesion, enabling precise and large-area microfabrication Suitable for anti-reflection films, wiring pattern formation, and microfluidic channels 	
VCH	4-Vinyl-1-cyclohexene	Synthesis, Polymerization	p58	liquid	<ul style="list-style-type: none"> Monomer for resins/polymerization Mw 108.2, CAS No. 100-40-3, San-Petrochemicals Co., Ltd.'s products 	
REGIT SM	Styrene-maleic acid ester copolymer	Forming	-	granule	<ul style="list-style-type: none"> Containing carboxyl groups in a molecule Dispersant for pigments & fillers/imparting hardness, abrasion-resistance & leveling property for floor polish coatings 	
SANWAX	Low-molecular-weight polyethylene	Forming, Excipient	p58	powder, pellet, etc.	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polyethylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigments, filler dispersants/improver for flowability, softening point, abrasion-resistance & releasability/flattening agent/lubricant/fixing agent for agrichemicals 	
VISCOL	Low-molecular-weight polypropylene	Forming, Excipient	p58	powder	<ul style="list-style-type: none"> Moderate hardness, low melt viscosity equivalent to polypropylene/incompatible with polymers excepting polyolefins/for abrasives/anti-sagging agents/binder for ink/pigment, filler dispersant/releasing agent for toner/improver for flowability, releasability, softening point & abrasion-resistance/flattening agent/lubricant 	
SANNIX AP-470, NE-240, NL	Aliphatic amine-based polyol	Polymerization, Forming, Molding	p60	liquid	<ul style="list-style-type: none"> Low viscosity/high reactivity Raw material for polyurethane foam 	
SANNIX NP-300 NEWPOL NP-300		Polymerization, Forming	p60/ -	liquid	<ul style="list-style-type: none"> Little shrinkage of foaming Raw material for polyurethane foam Cross-linking agent 	
SANNIX HM	Aromatic amine-based polyol	Polymerization, Forming	p60	liquid	<ul style="list-style-type: none"> Good compatibility with aromatic polyisocyanates Resulting foam has excellent compressive strength & dimensional stability with fine-cells Raw material for polyurethane foam (rigid foam for injection panels or boards) 	
MELPOL F-220	Isocyanate modified polyether	Polymerization, Film formation	-	pellet	<ul style="list-style-type: none"> Aqueous solution has surface activating ability/forming flexible & elastic film Decomposing thermally at relatively low temperature & hardly-leaving ash after incineration Sizing agent for glass-fibers (warp-yarn)/water-soluble polymer 	

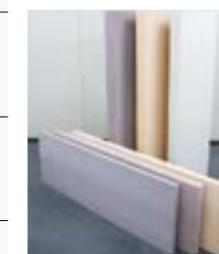
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For sofas

Product Name	Principal Component	Application	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
SANESTER	Polyalkylene adipate diol, polyester diol, etc.	Polymerization, Film formation, Forming	p60	liquid to paste, solid, etc.	<ul style="list-style-type: none"> Raw material for polyurethane resins (e.g. adhesives, coatings, elastomers & sealants) 	
NEWPOL BP	Bisphenol A-propylene oxide adduct	Polymerization, Forming	p60	liquid	<ul style="list-style-type: none"> Resulting resin has excellent corrosion resistance & flexibility Raw material for resins, organic-intermediate/modifier for resin 	
NEWPOL BPE	Bisphenol A-ethylene oxide adduct	Polymerization, Forming	p61	liquid, block, etc.		
SANNIX FA	Proprietary polyether polyol	Polymerization, Forming	-	liquid	<ul style="list-style-type: none"> Offering a wide selection of molecular weight Raw material for polyurethane foam For polyurethane foam from flexible to semi-rigid 	
SANNIX GP	Polyoxypropylene triol	Polymerization, Forming	p61	liquid	<ul style="list-style-type: none"> Offering a wide selection of molecular weight The resulting foam has ideal balance of properties Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX PP	Polyoxypropylene glycol	Polymerization, Forming	p61	liquid		
SANNIX PL-2100	Polyoxyethylene polyoxypropylene glycol	Polymerization, Forming	p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX GS-3000R	Polyether polyol	Polymerization, Forming	-	liquid		
SANNIX SP-750	Polyoxypropylene sorbitol ether	Polymerization, Forming	p61	liquid	<ul style="list-style-type: none"> Raw material for polyurethane foam & resins (e.g. adhesives, coatings, elastomers & sealants) 	
SANNIX TP-400	Trimethylolpropane-based polyether polyol	Polymerization, Forming	p61	liquid		
SANNIX KC	Polyether polyol or polymer polyol	Polymerization, Forming	-	liquid	<ul style="list-style-type: none"> Excellent curability and durability (moist heat resistance) Raw material for polyurethane foam (high-resilient foam) 	
ULTIFLOW FM-5704	Polymer Polyol	Polymerization, Foaming	-	liquid	<ul style="list-style-type: none"> Polymer Polyol (POP) for High-Resilient Flexible Polyurethane Foams Having Low Viscosity and High Flame Resistance For molded foams for automobile seats and high-resilient flexible slabstock foams used for sofas 	
SHARPFLOW FS-7301		Polymerization, Forming	-	liquid	<ul style="list-style-type: none"> Resulting foams have high hardness and good physical properties with good breathability Raw material for flexible slabstock foam 	
DSA, PDSA-DA	Alkenyl succinic anhydride	Synthesis, Polymerization	p59	liquid	<ul style="list-style-type: none"> Imparting long pot life, excellent electrical insulating property, flexibility & bending strength to resins Epoxy curing agent/rust preventive/corrosion inhibitor 	
POLYMIDE L	Polyamideamine	Polymerization, Film formation, Forming	p59	liquid	<ul style="list-style-type: none"> Cured epoxy resin has rust prevention, excellent adhesion, toughness & flexibility Curing agent for epoxy resin used to coatings, adhesives, civil engineering & construction, laminating & casting materials, etc. 	
SANMODUR	Synthetic/artificial wood (Polyurethanated product)	Shaping, Forming	-	board	<ul style="list-style-type: none"> Tooling material (chemical board) for models & molds in various processes (designing, trial & production) by cutting & milling Excellent fine structure, dimensional stability, homogeneity & processability/ giving appropriate property according to the application 	
UPRENE UX-307	Polyurethane emulsion	Film formation	p63	liquid	<ul style="list-style-type: none"> Forming film has excellent adhesion & water-resistance Adhesive for plastics, fabrics & woods/excels in adhesion with PVC sheet & plywood Unavailable for use directly brought into contact with the skins because of containing N-methyl pyrrolidone 	

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For tooling material (chemical board) for modeling

Product Name	Principal Component	Application	Page	Form (20±5°C)	Uses & Features (of all functions)	Major Applications
POLYMEDICA	Two-component type polyurethane	Polymerization, Forming	-	liquid	<ul style="list-style-type: none"> • Potting material for dialyzer & water purifiers 	
SANPRENE H	Polyurethane solution	Film formation	p63	liquid	<ul style="list-style-type: none"> • Resulting adhesion layer has excellent moisture permeability • Top layer for moisture-permeable & waterproofing fabrics (resulting film has the excellent moisture-permeability) 	
SANPRENE LQ		Film formation	p63	liquid	<ul style="list-style-type: none"> • For resin of artificial leather & synthetic leather • Top layer for moisture-permeable & waterproofing fabrics (resulting film has the excellent moisture permeability) 	
SANPRENE P	Urethane prepolymer	Polymerization, Forming	p63	liquid	<ul style="list-style-type: none"> • Resulting elastomer has excellent abrasion resistance, mechanical properties & low permanent compression set • For polyurethane elastomer 	



For automobile interiors



For synthetic leathers

Anionic Surfactants

Carboxylic-based

Composition and Structure	Product Name	Function
Polyoxyethylene lauryl ether carboxylic acid $C_{12}H_{25}O-(CH_2CH_2O)_n-CH_2COOH$	BEAULIGHT LCA-H	p3 Cleaning
		p19 Foaming/-stabilizing
Sodium polyoxyethylene lauryl ether carboxylate $C_{12}H_{25}O-(CH_2CH_2O)_n-CH_2COO^- Na^+$	BEAULIGHT LCA	p3 Cleaning
		p19 Foaming/-stabilizing
Polycarboxylate $\left[\begin{array}{c} R^1 \\ \\ R^2 \\ \\ R^3 \\ \\ COO^- M^+ \end{array} \right]_n$	CARRYBON L-400	p15 Dispersing
		p33 Viscosity Controlling
Sodium [(2-hydroxydodecyl)-oxy] acetate $C_{10}H_{21}-\underset{OH}{CH}CH_2O-CH_2COO^- Na^+$	BEAULIGHT SHAA	p3 Cleaning
		p19 Foaming/-stabilizing

Sulfosuccinate-based

Composition and Structure	Product Name	Function
Disodium laureth sulfosuccinate $C_{12}H_{25}O-C(=O)-CH(SO_3^- Na^+)-CH_2COO^- Na^+$	BEAULIGHT SSS	p3 Cleaning
		p19 Foaming/-stabilizing
Sodium dioctyl sulfosuccinate $Na^+ O_3S-CH(CH_2COO-CH_2CH_2CH_2CH_2CH_2CH_3)-CH_2COO-CH_2CH_2CH_2CH_2CH_2CH_3$	SANMORIN OT	p5 Wetting/Penetrating
		p9 Emulsifying
		p15 Dispersing
		p41 For Reacting/Forming
Sodium alkyl allyl sulfosuccinate $H_2C=CH-CH_2O-C(=O)-CH(SO_3^- Na^+)-CH_2OCOR$	ELEMNOL JS-20	p9 Emulsifying
Disodium polyoxyethylene alkyl sulfosuccinate $R-O-(CH_2CH_2O)_n-C(=O)-CH(SO_3^- Na^+)-CH_2COO^- Na^+$	BEAULIGHT ESS	p3 Cleaning
		p19 Foaming/-stabilizing

Sulfuric acid ester-based

Composition and Structure	Product Name	Function
Polyoxyalkylene alkyl ether ammonium sulfate $R-O-(AO)_n-SO_3^- NH_4^+$ AO: Alkylene oxide	ELEMNOL CLS-20	p9 Emulsifying
Sodium 2-ethylhexyl sulfate $CH_3CH_2CH_2CH_2-\underset{CH_2CH_3}{CH}-CH_2-O-SO_3^- Na^+$	SANDET ONA	p9 Emulsifying

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Composition and Structure	Product Name	Function
Sodium polyoxyethylene alkyl ether sulfate $R-O-(CH_2CH_2O)_n-SO_3^- Na^+$	SANDET END	p3 Cleaning
		p19 Foaming/-stabilizing
Sodium polyoxyethylene lauryl ether sulfate $C_{12}H_{25}O-(CH_2CH_2O)_n-SO_3^- Na^+$	SANDET EN	p3 Cleaning
		p9 Emulsifying
		p19 Foaming/-stabilizing
	BEAULIGHT NA-25S	p3 Cleaning
		p19 Foaming/-stabilizing

Cationic Surfactants

Ammonium salt-based

Composition and Structure	Product Name	Function
Cetyltrimethylammonium chloride $R-N^+(CH_3)_3 Cl^-$ R: Mainly Cetyl	LEBON TM-16	p21 Lubricating/Leveling
		p29 Plasticizing/Softening
		p35 Antistatic
Cetyltrimethylammonium methyl sulfate $R-N^+(CH_3)_3 O^- SO_3 CH_3$ R: Mainly Cetyl	LEBON TM-16MS	p39 Antibacterial
Stearyltrimethyl ammonium chloride $R-N^+(CH_3)_3 Cl^-$ R: Mainly Stearyl	LEBON TM-18	p23 Lubricating/Leveling
		p29 Plasticizing/Softening
		p35 Antistatic
Ethyl sulfuric acid lanolin fatty acid aminopropylethyl dimethylammonium $R-C(=O)-NH-CH_2CH_2CH_2-N^+(CH_3)_2-C_2H_5 \cdot C_2H_5SO_4^-$ R: Lanolin acid residue	CATION LQ	p23 Lubricating/Leveling
		p29 Plasticizing/Softening
		p37 Antistatic
Didecyldimethylammonium adipate $\left[C_{10}H_{21}-N^+(CH_3)_2 \right]_2 O^- C(=O)-CH_2CH_2CH_2CH_2-C(=O)-O^-$	OSMORIN DA-50	p39 Antibacterial
Behenyltrimethylammonium chloride or Stearyltrimethylammonium chloride $R-N^+(CH_3)_3 Cl^-$ R: Mainly Behenyl or Stearyl	ECONOL	p21 Lubricating/Leveling
		p29 Plasticizing/Softening
		p35 Antistatic

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Composition and Structure	Product Name	Function
<p>Distearyldimethylammonium chloride</p> $\text{R}-\text{N}^+(\text{CH}_3)_2 \text{Cl}^- \quad \text{R: Mainly Stearyl}$	CATION DSV	p21 Lubricating/Leveling
		p29 Plasticizing/Softening
		p35 Antistatic

Imidazolium salt-based

Composition and Structure	Product Name	Function
<p>Imidazoline compound</p> $\text{H}_3\text{C}-\text{N}^+(\text{R}^1)-\text{Imidazole} \text{X}^- \quad \text{R}^2$	CATION SF	p23 Lubricating/Leveling
		p29 Plasticizing/Softening
		p37 Antistatic

Benzalkonium-based

Composition and Structure	Product Name	Function
<p>Benzalkonium chloride</p> $\text{R}-\text{N}^+(\text{CH}_3)_2-\text{CH}_2-\text{C}_6\text{H}_5 \text{Cl}^-$ <p>R: Mainly Dodecyl, Tetradecyl</p>	CATION G-50	p39 Antibacterial

Nonionic Surfactants

Amide-based

Composition and Structure	Product Name	Function
<p>Alkylol amide based surfactant</p> $\text{R}-\text{C}(=\text{O})-\text{N}(\text{CH}_2\text{CH}_2\text{OH})_2$	PROFAN 128 EXTRA	p3 Cleaning
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
		p39 Rust Preventive
<p>Alkylol amide based surfactant</p> $\text{R}-\text{C}(=\text{O})-\text{N}(\text{CH}_2\text{CH}_2\text{OH})_2 \cdot \text{HN}(\text{CH}_2\text{CH}_2\text{OH})_2$	PROFAN 2012E	p3 Cleaning
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
		p39 Rust Preventive
<p>Alkylol amide based surfactant</p> $\text{R}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{OH}$	PROFAN AB-20, SME	p3 Cleaning
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
		p39 Rust Preventive
<p>Alkylol amide based surfactant</p> $\text{R}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{O}(\text{CH}_2\text{CH}_2\text{O})_n\text{H}$	PROFAN ME-20	p3 Cleaning
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
		p39 Rust Preventive

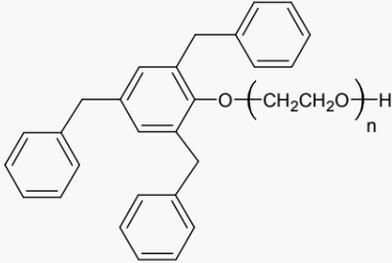
Ether-based (Amine type)

Composition and Structure	Product Name	Function
<p>Polyoxyalkylene alkyl amine</p> $\text{R}-\text{N}(\text{AO})_2 \text{H} \quad \text{AO: Alkylene oxide}$	PUREMEEL	p3 Cleaning

Ether-based

Composition and Structure	Product Name	Function
<p>Polyoxyalkylene alkyl ether derived from synthetic alcohols</p> $\text{R}-\text{O}(\text{AO})_n \text{H} \quad \text{AO: Alkylene oxide}$	EMULMIN AF-101	p3 Cleaning
	EMULMIN CS-100W	p3 Cleaning
	SEDORAN FF, SF, SNP	p5 Cleaning
	NAROACTY CL SANNONIC FN, FNR	p5 Cleaning
		p7 Wetting/Penetrating
	NAROACTY ID	p5 Cleaning
NEWPOL B-12	p7 Wetting/Penetrating	
BLEMBER	p13 Solubilizing	
BLEMBER	p23 Lubricating/Leveling	
<p>Polyoxyethylene alkyl ether</p> $\text{R}-\text{O}(\text{CH}_2\text{CH}_2\text{O})_n \text{H}$	ELEMINOL 200L	p11 Emulsifying
<p>Polyoxyethylene lauryl glycol derived from synthetic alcohols</p> $\text{C}_{10}\text{H}_{21}\text{CH}_2\text{CH}_2\text{O}(\text{CH}_2\text{CH}_2\text{O})_n \text{H}$ $\text{O}(\text{CH}_2\text{CH}_2\text{O})_m \text{H} \quad n+m \equiv 1$	NEWPOL DDE-10	p33 Viscosity Controlling
		p39 Antibacterial
<p>Polyoxypropylene glycol</p> $\text{HO}(\text{CH}_2\text{CH}(\text{CH}_3)\text{O})_n \text{H}$	NEWPOL PP	p7 Wetting/Penetrating
		p23 Lubricating/Leveling
		p41 For Reacting/Forming
<p>Polyoxyalkylene glycol monoether or borate</p> $\text{R}-\text{O}(\text{AO})_n \text{H} \quad \text{or} \quad \left[\text{R}-\text{O}(\text{AO})_{n-3-m} \right]_3 \text{B}(\text{OH})_m$ <p>AO: Alkylene oxide</p>	NEWPOL SBF	p13 Solubilizing
<p>Polyoxyalkylene lauryl ether derived from natural higher alcohols</p> $\text{C}_{12}\text{H}_{25}\text{O}(\text{AO})_n \text{H} \quad \text{AO: Alkylene oxide}$	EMULMIN FL, HL	p3 Cleaning
		p5 Wetting/Penetrating
		p11 Emulsifying
		p13 Solubilizing
	p15 Dispersing	

Continued on the next page →

Composition and Structure	Product Name	Function
Polyoxyethylene alkyl ether derived from natural higher alcohols $R-O-(CH_2CH_2O)_n-H$	EMULMIN CCE-130	p11 Emulsifying p15 Dispersing
	EMULMIN No.	p3 Cleaning p5 Wetting/Penetrating p9 Emulsifying p13 Solubilizing p15 Dispersing p19 Foaming/-stabilizing p41 Other Functions
Polyoxyalkylene alkyl ether derived from synthetic alcohols $R-O-(CH_2CH_2O)_n-H$	SANMORIN 11	p7 Wetting/Penetrating
	SANNONIC DE-70	p5 Cleaning p7 Wetting/Penetrating
	SANNONIC SS	p5 Cleaning p7 Wetting/Penetrating p9 Emulsifying p17 Dispersing
	CHEMICLEAN DLE-20	p5 Cleaning
Polyoxyethylene alkyl ether with limonene $R-O-(CH_2CH_2O)_n-H + H_3C-C_6H_9-CH_2-CH_3$	CHEMICLEAN DLE-20	p5 Cleaning
Polyoxyethylene cetyl ether derived from natural higher alcohols $C_{16}H_{33}O-(CH_2CH_2O)_n-H$	EMULMIN CC	p11 Emulsifying p13 Solubilizing p15 Dispersing p19 Foaming/-stabilizing p33 Viscosity Controlling
	ELEMINOL HB-29	p11 Emulsifying
Polyoxyethylene tribenzyl phenyl ether 	ELEMINOL HB-29	p11 Emulsifying
Polyoxyethylene polyoxypropylene polyol $R-\left[\left(OCH_2CH_2 \right)_n / \left(O-CH_2\overset{CH_3}{CH} \right)_m \right]_x-OH$	NEWPOL V	p7 Wetting/Penetrating p21 Defoaming p23 Lubricating/Leveling p33 Viscosity Controlling p37 Cold or Heat Insulating p41 For Reacting/Forming

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Composition and Structure	Product Name	Function
Polyoxyethylene polyoxypropylene glycol $H-\left(OCH_2CH_2 \right)_x-\left(O-CH_2\overset{CH_3}{CH} \right)_y-\left(OCH_2CH_2 \right)_z-OH$	NEWPOL PE	p5 Cleaning p7 Wetting/Penetrating p11 Emulsifying p13 Solubilizing p15 Dispersing p23 Lubricating/Leveling p25 Adhesive p29 Plasticizing/Softening p33 Viscosity Controlling p37 Antistatic p41 For Reacting/Forming
	NEWPOL GEP-2800	p23 Lubricating/Leveling p33 Viscosity Controlling
Poly(oxyethylene, oxypropylene) glyceryl ether $H-\left(O-CH_2\overset{CH_3}{CH} \right)_n-\left(OCH_2CH_2 \right)_m-O-CH_2-CH\left(O-CH_2\overset{CH_3}{CH} \right)_p-\left(OCH_2CH_2 \right)_q-OH$	NEWPOL TL	p7 Wetting/Penetrating p21 Defoaming p23 Lubricating/Leveling p33 Viscosity Controlling
Polyoxyethylene polyoxypropylene trimethylolpropane $H_2C-O-\left(O-CH_2\overset{CH_3}{CH} \right)_n-\left(OCH_2CH_2 \right)_m-CH_2-C\left(CH_2-O-\left(O-CH_2\overset{CH_3}{CH} \right)_p-\left(OCH_2CH_2 \right)_q \right)_2-H$	NEWPOL 50HB	p7 Wetting/Penetrating p21 Defoaming p23 Lubricating/Leveling p33 Viscosity Controlling p37 Cold or Heat Insulating p41 For Reacting/Forming
Polyoxyethylene polyoxypropylene butyl ether $C_4H_9O-\left(OCH_2CH_2 \right)_n-\left(O-CH_2\overset{CH_3}{CH} \right)_m-OH$	NEWPOL 75H-90000	p7 Wetting/Penetrating p21 Defoaming p23 Lubricating/Leveling p33 Viscosity Controlling p37 Cold or Heat Insulating p41 For Reacting/Forming
Polyoxyethylene polyoxypropylene hexylene glycol ether $H-\left(O-CH_2\overset{CH_3}{CH} \right)_p-\left(OCH_2CH_2 \right)_q-C_6H_{12}-O-\left(OCH_2CH_2 \right)_n-\left(O-CH_2\overset{CH_3}{CH} \right)_m-OH$	NEWPOL 75H-90000	p7 Wetting/Penetrating p21 Defoaming p23 Lubricating/Leveling p33 Viscosity Controlling p37 Cold or Heat Insulating p41 For Reacting/Forming

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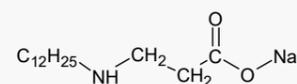
Composition and Structure	Product Name	Function
Polyoxyethylene lauryl ether derived from natural higher alcohols $C_{12}H_{25}O-(CH_2CH_2O)_nH$	EMULMIN L	p3 Cleaning
		p11 Emulsifying
		p13 Solubilizing
		p15 Dispersing
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
	EMULMIN LS	p3 Cleaning
		p11 Emulsifying
		p13 Solubilizing
		p15 Dispersing
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
	EMULMIN NL	p3 Cleaning
		p11 Emulsifying
		p13 Solubilizing
		p15 Dispersing
		p19 Foaming/-stabilizing
		p33 Viscosity Controlling
LAUROMACROGOL 100	p5 Cleaning	
	p7 Wetting/Penetrating	
Polyoxypropylene triol $H-(O-CH(CH_3)-CH_2)_l-O-CH_2-CH(CH_3)-O-(CH_2-CH(CH_3)-O)_mH$	p7 Wetting/Penetrating	
	p23 Lubricating/Leveling	
	p41 For Reacting/Forming	
Polyoxypropylene butyl ether $C_4H_9O-(CH_2-CH(CH_3)-O)_nH$	p7 Wetting/Penetrating	
	p21 Defoaming	
	p23 Lubricating/Leveling	
	p33 Viscosity Controlling	
	p41 For Reacting/Forming	

Ester-based

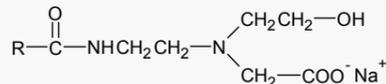
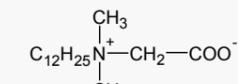
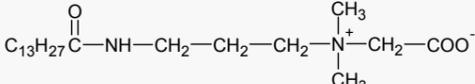
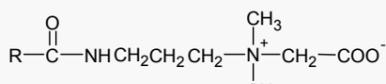
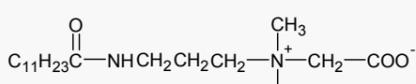
Composition and Structure	Product Name	Function
Polyoxyethylene distearate $C_{17}H_{35}C(=O)-O-(CH_2CH_2O)_n-C(=O)-C_{17}H_{35}$	EMULMIN 862	p33 Viscosity Controlling
Glyceryl monostearate $HO-CH_2-CH(OH)-CH_2-O-C(=O)-C_{17}H_{35}$	TG-C	p7 Wetting/Penetrating p11 Emulsifying p13 Solubilizing p23 Lubricating/Leveling p29 Plasticizing/Softening
Sorbitan mono- or di-fatty acid ester $R-C(=O)-O-CH_2-C_6H_8O_2(OZ)_2(OH)_2$ Z: H or COR	IONET S	p7 Wetting/Penetrating p11 Emulsifying p13 Solubilizing p17 Dispersing p21 Defoaming p23 Lubricating/Leveling p29 Plasticizing/Softening p33 Viscosity Controlling p39 Rust Preventive
Polyoxyethylene sorbitan monofatty acid ester $R-C(=O)-O-CH_2-C_6H_8O_2(O-CH_2CH_2O)_x(O-CH_2CH_2O)_y(O-CH_2CH_2O)_zH$	IONET T	p7 Wetting/Penetrating p11 Emulsifying p13 Solubilizing p17 Dispersing p23 Lubricating/Leveling p29 Plasticizing/Softening p33 Viscosity Controlling p39 Rust Preventive
Polyoxyethylene fatty acid diester $R^1-C(=O)-O-(CH_2CH_2O)_n-C(=O)-R^2$	IONET DL-200, DO, DS	p5 Cleaning p11 Emulsifying p13 Solubilizing p17 Dispersing p23 Lubricating/Leveling
Polyoxyethylene fatty acid monoester $R-C(=O)-O-(CH_2CH_2O)_nH$	IONET MO, MS	p5 Cleaning p11 Emulsifying p13 Solubilizing p17 Dispersing p23 Lubricating/Leveling

Amphoteric Surfactants

Amino Acid-type

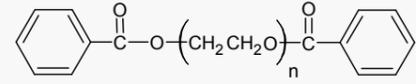
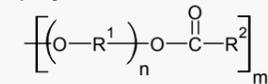
Composition and Structure	Product Name	Function
<p>Alkyldiaminoethylglycine hydrochloride</p> $R-NHCH_2CH_2NHCH_2CH_2NHCH_2-COOH \quad HCl$ <p>R: Mainly Dodecyl, Tetradecyl</p>	LEBON T-2	p39 Antibacterial
<p>Sodium lauramino propionate</p> 	PIUSERIA AMC	p5 Cleaning p21 Foaming/-stabilizing

Imidazoline-type, Betaine-type

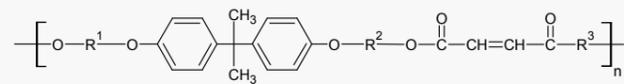
Composition and Structure	Product Name	Function
<p>Alkyl carboxymethyl hydroxyethyl imidazolium betaine</p>  <p>R: Coconut fatty acid residue</p>	LEBON CIB GSS	p5 Cleaning p21 Foaming/-stabilizing
<p>Lauryldimethylaminoacetic acid betaine</p> 	LEBON LD-36	p5 Cleaning p21 Foaming/-stabilizing
<p>Myristic acid amide propyl betaine</p> 	LEBON MY-30W	p5 Cleaning p21 Foaming/-stabilizing
<p>Coconut oil fatty acid amide propyl betaine</p>  <p>R: Coconut fatty acid residue</p>	LEBON HC-30W, 2000HG	p5 Cleaning p21 Foaming/-stabilizing
<p>Lauric acid amidopropyl betaine</p> 	LEBON 2000L	p5 Cleaning p21 Foaming/-stabilizing

Functional bases, intermediates, additives

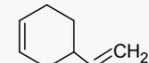
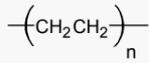
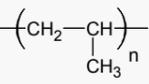
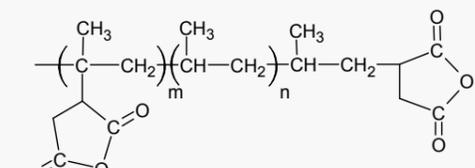
Ethers

Composition and Structure	Product Name	Function
<p>Polyethyleneglycol dibenzoate</p> 	SANFLEX EB	p31 Plasticizing/Softening
<p>Esterified multi-functional polyetherpolyol</p> 	SANFLEX GPA-3000	p31 Plasticizing/Softening

Esters

Composition and Structure	Product Name	Function
<p>Bisphenol-A type unsaturated polyester</p> 	CHEMITYLEN PEB-13ST	p27 Adhesive

Olefin or Styrene-based

Composition and Structure	Product Name	Function
<p>4-Vinyl-1-cyclohexene</p> 	VCH	p43 For Reacting/Forming
<p>Low-molecular-weight polyethylene</p> 	SANWAX	p17 Dispersing p25 Lubricating/Leveling p31 Plasticizing/Softening p35 Viscosity Controlling p41 Other Functions p43 For Reacting/Forming
<p>Low-molecular-weight polypropylene</p> 	VISCOL	p17 Dispersing p25 Lubricating/Leveling p31 Plasticizing/Softening p35 Viscosity Controlling p41 Other Functions p43 For Reacting/Forming
<p>Acid modified polyolefin</p> 	UMEX	p17 Dispersing p27 Adhesive

Acids/Acid Anhydrides Z: Proprietary functional group

Composition and Structure	Product Name	Function
<p>Alkenylsuccinic acid ester</p> $R^1-CH=CH-CH(R^2)-CH_2-COOZ^1$ $H_2C-COOZ^2$	SANHIBITOR	p39 Wetting/Penetrating
<p>Alkenylsuccinic anhydride</p> $R^1-CH=CH-CH(R^2)-CH_2-C(=O)-O-C(=O)-H_2C$		p39 Rust Preventive
<p>Sodium-5-sulphoisophthalic acid</p>	SIPA	p37 Antistatic
		p41 Other Functions
<p>Sodium 5-sulfoisophthalic acid dimethyl ester</p>	SIPM	p37 Antistatic
		p41 Other Functions
<p>Dodecyl succinic anhydride</p> $R^1-CH=CH-CH(R^2)-CH_2-C(=O)-O-C(=O)-H_2C$ $R^1+R^2=C_{12}H_{25}$	DSA	p27 Adhesive
		p31 Plasticizing/Softening
		p35 Viscosity Controlling
		p39 Rust Preventive
		p45 For Reacting/Forming
<p>Pentadecyl succinic anhydride</p> $R^1-CH=CH-CH(R^2)-CH_2-C(=O)-O-C(=O)-H_2C$ $R^1+R^2=C_{15}H_{31}$	PDSA-DA	p27 Adhesive
		p31 Plasticizing/Softening
		p35 Viscosity Controlling
		p39 Rust Preventive
		p45 For Reacting/Forming
<p>Fatty acid compound</p> $R-C(=O)-OH$	SANFRIC	p25 Lubricating/Leveling

Nitrogen-Containing Compounds Z: Proprietary functional group

Composition and Structure	Product Name	Function
<p>Liquid polyamideamine</p> $H_2N-Z^1-NH-Z^2-NH-C(=O)-Z^3-C(=O)-NH-Z^4-NH-Z^5-NH-H$	POLYIMIDE L	p27 Adhesive
		p39 Rust Preventive
		p45 For Reacting/Forming

Polyols

Composition and Structure	Product Name	Function
<p>Polyethylene glycol</p> $HO-(CH_2CH_2O)_n-H$	PEG	p9 Wetting/Penetrating
		p15 Solubilizing
		p17 Dispersing
		p25 Lubricating/Leveling
		p27 Adhesive
		p31 Plasticizing/Softening
		p35 Viscosity Controlling
		p37 Antistatic
		p37 Cold or Heat Insulating
		p41 Other Functions
	p43 For Reacting/Forming	
	MACROGOL	p9 Wetting/Penetrating
		p15 Solubilizing
		p25 Lubricating/Leveling
		p27 Adhesive
		p31 Plasticizing/Softening
	p35 Viscosity Controlling	
	p43 For Reacting/Forming	
<p>Aliphatic amine-based polyol</p> $-R-N(CH_2CH(CH_3)O)_n(CH_2CH(CH_3)O)_m-H$	SANNIX AP	p37 Cold or Heat Insulating
		p43 For Reacting/Forming
	SANNIX NP	p37 Sealing/Waterproofing
		p37 Cold or Heat Insulating
	SANNIX NE	p43 For Reacting/Forming
<p>Aliphatic amine-based polyol</p> $-R-N(CH_2CH_2O)_n(CH_2CH_2O)_m-H$		p37 Cold or Heat Insulating
	p43 For Reacting/Forming	
<p>Aromatic amine-based polyol</p>	SANNIX HM	p37 Cold or Heat Insulating
		p43 For Reacting/Forming
<p>Polyethylene adipate diol</p> $H-[O-R-O-C(=O)-(CH_2)_4-C(=O)]_m-O-R-OH$	SANESTER	p45 For Reacting/Forming
<p>Bisphenol A-propylene oxide adduct</p>	NEWPOL BP	p31 Plasticizing/Softening
		p45 For Reacting/Forming

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Composition and Structure	Product Name	Function
<p>Bisphenol A-ethylene oxide adduct</p> $\text{H}-(\text{OCH}_2\text{CH}_2)_n-\text{O}-\text{C}_6\text{H}_4-\text{C}(\text{CH}_3)_2-\text{C}_6\text{H}_4-\text{O}-(\text{CH}_2\text{CH}_2\text{O})_m-\text{H}$	NEWPOL BPE	<p>p31 Plasticizing/Softening</p> <p>p45 For Reacting/Forming</p>
<p>Polyoxypropylene sorbitol ether</p> $\text{H}-(\text{PO})_n-\text{O}-\begin{cases} \text{O}-(\text{PO})_l-\text{H} \\ \text{O}-(\text{PO})_m-\text{H} \\ \text{O}-(\text{PO})_x-\text{H} \\ \text{O}-(\text{PO})_y-\text{H} \\ \text{O}-(\text{PO})_z-\text{H} \end{cases}$ <p>PO: Propylene oxide</p>	SANNIX SP-750	<p>p27 Adhesive</p> <p>p37 Sealing/Waterproofing</p> <p>p37 Cold or Heat Insulating</p> <p>p45 For Reacting/Forming</p>
<p>Trimethylolpropane-based polyether polyol</p> $\text{H}-(\text{O}-\text{CH}(\text{CH}_3)-\text{CH}_2)_x-\text{O}-\text{C}(\text{CH}_3)_2-\text{C}(\text{CH}_3)_2-\text{O}-(\text{CH}_2-\text{CH}(\text{CH}_3)-\text{O})_y-\text{H}$	SANNIX TP-400	<p>p27 Adhesive</p> <p>p31 Plasticizing/Softening</p> <p>p37 Sealing/Waterproofing</p> <p>p37 Cold or Heat Insulating</p> <p>p45 For Reacting/Forming</p>
<p>Polyoxyethylene polyoxypropylene glycol</p> $\text{H}-(\text{OCH}_2\text{CH}_2)_x-(\text{O}-\text{CH}_2-\text{CH}(\text{CH}_3))_y-(\text{OCH}_2\text{CH}_2)_z-\text{OH}$	SANNIX PL-2100	<p>p27 Adhesive</p> <p>p31 Plasticizing/Softening</p> <p>p45 For Reacting/Forming</p>
<p>Polyoxypropylene glycol</p> $\text{HO}-\text{CH}_2-\text{CH}(\text{CH}_3)-\text{O}-\text{H}$	SANNIX PP	<p>p27 Adhesive</p> <p>p31 Plasticizing/Softening</p> <p>p37 Sealing/Waterproofing</p> <p>p37 Cold or Heat Insulating</p> <p>p45 For Reacting/Forming</p>
<p>Polyoxypropylene triol</p> $\text{H}-(\text{O}-\text{CH}(\text{CH}_3)-\text{CH}_2)_l-\text{O}-\text{CH}_2-\text{CH}(\text{CH}_3)-\text{O}-(\text{CH}_2-\text{CH}(\text{CH}_3)-\text{O})_m-\text{H}$ <p>Some SANNIX GP are copolymer with ethylene oxide</p>	SANNIX GP	<p>p27 Adhesive</p> <p>p31 Plasticizing/Softening</p> <p>p37 Sealing/Waterproofing</p> <p>p37 Cold or Heat Insulating</p> <p>p45 For Reacting/Forming</p>

Methacrylates/Acrylates-based

Composition and Structure	Product Name	Function
<p>Methacrylic acid - ethyl acrylate copolymer</p> $\left(\text{CH}_2-\overset{\text{CH}_3}{\underset{\text{COOH}}{\text{C}}} \right)_n \left(\text{CH}_2-\overset{\text{H}}{\underset{\text{COOC}_2\text{H}_5}{\text{C}}} \right)_m$	POLYQUID	<p>p27 Adhesive</p> <p>p41 Other Functions</p> <p>p43 For Reacting/Forming</p>
<p>Methacrylate copolymer and refined mineral oil</p> $\left(\overset{\text{R}^1}{\text{C}}-\text{CH}_2 \right)_n \left(\overset{\text{CH}_3}{\underset{\text{O}-\text{R}^2}{\text{C}}}=\text{C}-\text{CH}_2 \right)_m$ <p>R¹: H or CH₃ R²: Alkyl R³: Alkyl</p>	ACLUBE	<p>p25 Lubricating/Leveling</p> <p>p35 Viscosity Controlling</p>
<p>Dialkylaminoalkyl methacrylate derivatives</p> $\text{H}_2\text{C}=\overset{\text{CH}_3}{\text{C}}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{R}^1-\text{Z}$ <p>Z: $\text{---N} \begin{matrix} \text{R}^1 \\ \text{R}^2 \end{matrix}$ or $\text{---N}^+ \begin{matrix} \text{R}^1 \\ \text{R}^2 \\ \text{R}^3 \end{matrix} \text{X}^-$</p>	METHACRYLATE	<p>p9 Wetting/Penetrating</p> <p>p19 Flocculating</p>
<p>Long-chain alkyl methacrylate</p> $\text{H}_2\text{C}=\overset{\text{CH}_3}{\text{C}}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{R}$		<p>p31 Plasticizing/Softening</p> <p>p43 For Reacting/Forming</p>

Others

Composition and Structure	Product Name	Function
<p>Polyoxyethylene dimethyl ether</p> $\text{H}_3\text{C}-\text{O}-(\text{CH}_2\text{CH}_2\text{O})_n-\text{CH}_3$	SANFINE DM-200	<p>p15 Solubilizing</p>

Functional compounds, polymers

Urethane Series

Composition and Structure	Product Name	Function
<p>Polyurethane emulsion</p> $\left[\text{C}(=\text{O})\text{NH}-\text{R}^1-\text{NH}-\text{C}(=\text{O})\text{O}-\text{R}^2-\text{O} \right]_n$	UPRENE UXA-307	p27 Adhesive
		p45 For Reacting/Forming
<p>Polyurethane solution</p> $\left[\text{C}(=\text{O})\text{NH}-\text{R}^1-\text{NH}-\text{C}(=\text{O})\text{O}-\text{R}^2-\text{O} \right]_n$	SANPRENE H	p29 Adhesive
		p47 For Reacting/Forming
	SANPRENE LQ	p47 For Reacting/Forming
<p>Urethane prepolymer</p> $\text{OCN}\left[\text{R}^1-\text{NH}-\text{C}(=\text{O})\text{O}-\text{R}^2-\text{O}-\text{C}(=\text{O})\text{NH}-\text{R}^3 \right]_n\text{NCO}$	SANPRENE P	p47 For Reacting/Forming

Methacrylate/Acrylate-based

Composition and Structure	Product Name	Function
<p>Acrylic resin or acrylic resin solution</p> $\left(\text{CH}_2\text{CH} \left(\begin{array}{c} \\ \text{ROOC} \end{array} \right) \right)_n \left(\text{CH}_2\text{CH} \left(\begin{array}{c} \\ \text{X} \end{array} \right) \right)_m$ <p>R: Alkyl or H X: Functional group</p>	POLYTHICK	p27 Adhesive

PEG Products (Polyethylene glycol)

Used in many industries, such as intermediates for the manufacture of surfactants, plasticizers, lubricants, etc.

Product Name	Mn ^{*1}	OHV ^{*2}	Color (hazen)	Appearance (20±5°C)	pH ^{*3}	Fleezing Point °C
PEG-200	200	563	10	Colorless liquid	5.5	<-35
PEG-300	300	372	10	Colorless liquid	5.5	-10
PEG-400	400	281	10	Colorless liquid	5.5	7
PEG-600	600	187	10	Colorless liquid	5.5	20
PEG-1000	1,000	112	10 ^{*4}	Wax	6.5	37
PEG-1500	550	207	10 ^{*4}	Paste	5.5	40
PEG-1540	1,450	79	10 ^{*4}	Wax	6.0	45
PEG-2000	2,000	56	10 ^{*4}	Wax	5.5	51
PEG-4000N	3,100	36	10 ^{*4}	White flake	6.5	55
PEG-4000S	3,400	33	10 ^{*4}	White flake	6.5	56
PEG-6000P	8,300	14	10 ^{*4}	White powder	7.0	61 ^{*5}
PEG-6000S	8,300	14	10 ^{*4}	White flake	6.5	61 ^{*5}
PEG-10000	11,000	10	10 ^{*4}	White flake	6.5	62 ^{*5}
PEG-20000	20,000	5.6	10 ^{*4}	White flake	7.0	63 ^{*5}
PEG-20000P	20,000	5.6	10 ^{*4}	White powder	7.0	63 ^{*5}

*1 Number average molecular weight/calculated by OHV *2 Hydroxyl value by acetylation *3 5 wt % aq solution
*4 25 wt % aq solution *5 Melting point

IONET Products

<IONET M, D>

- IONET M are Polyoxyethylene monofatty acid esters
IONET D are Polyoxyethylene difatty acid esters
- Widely used in various industries such as agrichemical, metal, cosmetic, paper, pulp or textile as emulsifiers, dispersants and leveling agents
- L: Lauric acid
S: Stearic acid
O: Oleic acid

<IONET S, T>

- Nonionic and lipophilic surfactant of sorbitan derivatives
- IONET S are Sorbitan mono- or di-fatty acid esters known as SPAN type surfactants
IONET T are ethylene oxide adducts of IONET S and more hydrophilic, known as TWEEN type surfactants
- Used as emulsifiers, solubilizer, dispersants and rust preventives
- IONET S can be used as a defoaming agent

Product Name	Appearance (20±5°C)	HLB	pH ^{*1}	Cloud Point ^{*2} °C
IONET DL-200	Yellow liquid	6.6	6.5	<20
IONET DO-400	Pale straw-colored liquid	8.4	7.0	<20
IONET DO-600	Brown liquid	10.4	6.5	<20
IONET DO-1000	Pale yellow solid	12.9	6.5	35
IONET DS-300	Pale yellow-white solid	7.3	7.0	<20
IONET DS-400	Pale yellow-white solid	8.5	7.0	<20
IONET MO-200	Pale brown liquid	8.4	7.0	<20
IONET MO-400	Pale straw-colored liquid	11.8	7.0	<20
IONET MO-600	Pale straw-colored liquid	13.7	7.0	53
IONET MS-400	Pale yellow solid	11.9	7.0	<20
IONET MS-1000	Pale yellow-white solid	15.7	6.5	>100
IONET S-20	Straw-colored liquid	8.6	7.0	<20
IONET S-60V	Pale yellow-white granule	4.7	8.0	-
IONET S-80	Straw-colored liquid	4.3	7.0	-
IONET S-80S	Straw-colored liquid	4.2	7.0	-
IONET S-85	Straw-colored liquid	1.8	-	-
IONET T-20C	Yellow liquid	16.7	-	>100
IONET T-60V	Yellow liquid	14.9	-	>100
IONET T-80V	Yellow liquid	15.0	7.0 ^{*3}	>100

*1 1 wt % aq solution *2 2 wt % aq solution *3 5 wt % aq solution

EMULMIN Products

- Used as emulsifiers for creams, lotions, emulsion polymerization of resins or pigment dispersant for coatings because of their excellent emulsifying property
- Having lubricating property and protecting the surfaces of metals.
Effective as emulsifiers for reducing the coefficient of friction of machine oils; especially mineral oils

<EMULMIN FL, HL>

- Excellent low-temperature fluidity and detergency compared to the other nonionic surfactants with similar HLB

<EMULMIN CS-100W>

- Eserts excellent detergency in low amount. Enables to decrease the number of times of rinsing because of its superior solubility in water

<EMULMIN No.>

- Besides, used for foaming agent, thickener, oiliness improver, moisturizer, solubilizer, raw material for chemical reaction, pulp cooking aid and leveling dyeing agent

<EMULMIN NL>

- Besides, applicable for foaming agents, thickener or solubilizer

<EMULMIN LS>

- Besides, applicable for solubilizer, gelling agents and foaming agents

Product Name	Composition	Appearance (20±5°C)	HLB	pH ^{*1}	
EMULMIN CS-100W	Polyoxyalkylene alkyl ether	Colorless to pale yellow liquid	-	7.0	
EMULMIN FL-80	Polyoxyalkylene lauryl ether	Colorless to pale yellow liquid	-	6.5	
EMULMIN FL-100		Colorless to pale yellow liquid	-	7.0	
EMULMIN HL-80		Colorless to pale yellow liquid	-	7.0	
EMULMIN HL-100		Colorless to pale yellow liquid	-	7.0	
EMULMIN 40		Polyoxyethylene oleyl ether or cetyl ether	Pale yellow liquid	8.0	7.0
EMULMIN 50	Straw-colored liquid		9.0	6.5	
EMULMIN 70	Pale straw-colored liquid		10.8	5.0	
EMULMIN 110	Pale yellow paste		13.2	7.0	
EMULMIN 140	Pale yellow paste to solid		14.2	7.0	
EMULMIN 180	White to pale yellow paste		15.1	7.0	
EMULMIN 240	White to pale yellow solid		16.1	7.0	
EMULMIN LS-90	Polyoxyethylene lauryl ether		Colorless to pale yellow paste	13.6	6.5
EMULMIN NL-70			Colorless to pale yellow liquid	12.4	6.5
EMULMIN NL-90			Pale yellow liquid	13.6	6.5
EMULMIN NL-100		Pale yellow liquid	14.0	6.5	
EMULMIN NL-110		White solid	14.4	6.5	
EMULMIN CC-150	Polyoxyethylene cetyl ether	White to pale yellow solid (wax)	14.5	6.3 ^{*2}	
EMULMIN CC-200		White to pale yellow solid (wax)	15.5	6.2 ^{*2}	
EMULMIN CCE-130	Polyoxyethylene alkyl ether	White to pale yellow solid	14.0	6.0	

*1 1 wt % aq solution *2 5 wt % aq solution

■ SANNONIC Products

Used as cleaning bases, penetrating agents and emulsifiers, etc.

Product Name	Composition	Appearance	pH	HLB	Cloud Point ^{*3} °C
SANNONIC FN-80	Polyoxyalkylene alkyl ether	Colorless to pale yellow liquid	6.5 ^{*1}	-	34
SANNONIC FN-100		Colorless to pale yellow liquid	6.5 ^{*1}	-	56
SANNONIC FN-140		Colorless to pale yellow liquid	6.5 ^{*1}	-	79
SANNONIC FNR-8		Colorless to pale yellow liquid	6.5 ^{*1}	-	35
SANNONIC FNR-73		Colorless to pale yellow liquid	6.5 ^{*1}	-	51 ^{*4}
SANNONIC SS-30	Polyoxyethylene alkyl ether	Colorless liquid	7.0 ^{*1}	8.1	<20
SANNONIC SS-50		Colorless liquid	6.5 ^{*1}	10.5	<20
SANNONIC SS-70		Pale yellow liquid	6.5 ^{*2}	12.1	33
SANNONIC SS-90		Colorless to pale yellow liquid	6.5 ^{*2}	13.2	56
SANNONIC SS-120		Colorless to pale yellow liquid	6.5 ^{*2}	14.5	83
SANNONIC DE-70		Colorless to pale yellow liquid	6.5 ^{*1}	13.2	62

*1 1 wt % aq solution *2 5 wt % aq solution *3 2 wt % aq solution *4 10 wt % in 25% BDG aq solution

■ NAROACTY Products

Alkylene oxide adducts with narrow molecular weight distribution. NAROACTY CL products have excellent detergency & emulsifiability.

NameProduct	Composition	Appearance	pH ^{*1}	HLB	Cloud Point ^{*2} °C
NAROACTY CL-40	Polyoxyethylen alkyl ether	Colorless to pale yellow liquid	6.5	8.9	<20
NAROACTY CL-50		Colorless to pale yellow liquid	6.5	10.0	<20
NAROACTY CL-70	Polyoxyalkylene alkyl ether	Colorless to pale yellow liquid	6.5	11.7	<20
NAROACTY CL-85		Colorless to pale yellow liquid	6.5	12.6	41
NAROACTY CL-95		Colorless to pale yellow liquid	6.5	13.1	54
NAROACTY CL-100		Colorless to pale yellow liquid	6.5	13.3	64
NAROACTY CL-120		Pale yellow liquid to solid	6.5	14.1	80
NAROACTY CL-140	Polyoxyethylene alkyl ether	White solid	6.5	14.7	93
NAROACTY CL-160		White solid	6.5	15.2	99
NAROACTY CL-200		White solid	6.5	16.0	>100
NAROACTY CL-400	Polyoxyethylene alkyl ether	White flake	6.5	17.8	>100
NAROACTY ID-40	Polyoxyalkylene alkyl ether	Colorless to pale yellow liquid	6.5	8.1	<20
NAROACTY ID-60	Polyoxyethylene alkyl ether	Colorless to pale yellow liquid	6.5	12.5	<20
NAROACTY ID-70		Colorless to pale yellow liquid	6.5	13.2	<20

*1 1 wt % aq solution *2 2 wt % aq solution

■ SANWAX, VISCOL Products

SANWAX (polyethylene-type wax) and VISCOL (polypropylene-type wax) have moderate hardness & high softening point equivalent to those of polyethylene or polypropylene and excellent dispersibility of pigments. Generally incompatible with resins except polyolefins. Having low melt viscosities approximately equal to those of paraffin wax. Widely used as dispersant for pigments or fillers, binders for ink, anti-sagging agent for coatings, abrasive and flowability improver, releasing agent, softening point enhancer, abrasion resistance improver, flattening agent and lubricants, etc.

Product Name	Appearance (20±5°C)	Color ¹	Melt Viscosity ² mPa · s (140°C)	Melting Point ³ °C	Penetration Hardness ⁴	Mw ⁵
SANWAX 161-P	White powder	30	3,400	107	2.0	27,000
SANWAX 131-P	White powder	30	900	106	3.5	20,000
SANWAX 151-P	White powder	30	250	102	4.0	13,000
SANWAX 171-P	White powder	30	160	102	4.5	10,000
VISCOL 330-P	White powder	50	4,000 ⁷	145	<1.0	40,000
VISCOL 440-P	White powder	50	1,800 ⁷	144	<1.0	27,000
VISCOL 550-P	White powder	50	160 ⁷	139	<1.0	13,000
VISCOL 660-P	White powder	1 ⁶	60 ⁷	136	1.5	10,000
VISCOL LM500	Pale yellow powder	1 ⁶	1,400 ⁷	125	<1.0	30,000

*1 Molten, APHA *2 Brookfield type viscometer *3 DSC Method *4 ASTM D 1321-61T
*5 Weight average molecular weight *6 Molten, gardner *7 Measured at 160°C

■ UMEX Products

UMEX products are a series of acid modified polyolefin. These products have higher degrees of modification and lower melt viscosity compared with conventional acid modified polyolefin. Polyolefins blended with UMEX excel in dispersibility of both pigments and fillers in resins, readily adhere to other materials, and make paints readily adherable to resulting resins. Moreover, the products are very effective as modifiers for hot melt adhesives.

Product Name	Main Chain Composition ¹	Appearance (20±5°C)	Melt Viscosity mPa · s (160°C)	Softening Point ² °C	Acid Value ³	Specific Gravity ⁴ (20°C)
UMEX 100TS	PP	Pale yellow powder	120	136	3.5	0.89
UMEX 110TS	PP	Pale yellow powder	135	138	7	0.89
UMEX 1001	PP	Yellow granule	15,000	142	26	0.91
UMEX 1010	PP	Yellow granule	6,000	135	52	0.93

*1 PP: Polypropylene *2 Measured according to ASTM E28 (ring and ball method) *3 Measured according to ASTM D1386 *4 ASTM D 792

■ PELESTAT Products

Proprietary block copolymer composed of hydrophilic and lipophilic segments. Permanent antistatic agent. Imparting a permanent antistatic property independent on humidity right after molding (e.g. injection molding and extrusion molding). We offer wide selections of PELESTAT for polystyrenes such as ABS, polyolefins or others.

Product Name	Appearance (20±5°C)	mp ¹ °C (°F)	MFR ² g (10min)	Surface Resistivity ³ Ω	Td ⁴ °C (°F)	Typical Applied Resins
PELESTAT NC6321	Pale yellow pellet	203 (397)	20 (215°C)	1×10 ⁹	285 (545)	ABS, HIPS, PBT, Nylon, PC/ABS-alloy
PELESTAT NC7530	Pale yellow pellet	176 (349)	10 (190°C)	2×10 ⁹	280 (536)	Polystyrenes such as MS
PELESTAT 300	Pale yellow pellet	135 (275)	30 (190°C)	1×10 ⁸	240 (464)	Polyolefins
PELESTAT 230	Pale yellow pellet	163 (325)	10 (190°C)	5×10 ⁷	250 (482)	Polyolefins
PELESTAT VH230	Pale yellow pellet	163 (325)	9 (190°C)	5×10 ⁷	250 (482)	For films or sheets of polyolefins, etc.
PELESTAT 6500	Pale yellow pellet	191 (376)	20 (215°C)	1×10 ⁸	285 (545)	Polystyrene such as ABS & MS

*1 Melting point *2 ASTM D 1238 (under 21.18N) *3 ASTM D 257 *4 Starting thermal degradation temperature measured by TG-DTA, in the air

■ PELECTRON Products

Permanent antistatic agent with lower-resistivity type of PELESTAT. Imparting excellent antistatic properties to electrostatic diffusion region (surface resistivity 10⁸-10⁹Ω) and preventing problems caused by static electricity including destruction of electronic circuits, electric shock, appliance malfunctions and dust adhesion.

Product Name	Appearance (20±5°C)	mp ¹ °C (°F)	MFR ² g (10min)	Surface Resistivity ³ Ω	Td ⁴ °C (°F)	Typical Applied Resins
PELECTRON AS	Pale yellow pellet	195 (383)	30 (215°C)	4×10 ⁶	285 (545)	ABS, HIPS, PBT, Nylon, PC/ABS-alloy
PELECTRON PVL	Pale yellow pellet	135 (275)	15 (190°C)	3×10 ⁶	250 (482)	For films or sheets of polyolefins, etc.

*1 Melting point *2 ASTM D 1238 (under 21.18N) *3 ASTM D 257 *4 Starting thermal degradation temperature, measured by TG-DTA, in the air

SANNIX Products

"SANNIX" is the trade name of the first polyether polyols for polyurethane foam in Japan that we developed in 1960. We offer a wide variety of SANNIX for various applications such as super flexible, flexible, semi-rigid and rigid polyurethane foams.

FG ^{*1}	Product Name	Composition		No.	Number Average Molecular Weight (Mn)						Property			
		Active Hydrogen Compound	Alkylene Oxide ^{*2}		- 300	300 - 600	600 - 1000	1000 - 2000	2000 - 3000	> 3000	OHV	Viscosity mPa · s (25°C)		
2	SANNIX PL	Propylene glycol	EO/PO	2100					●		44	450		
	SANNIX PP	Propylene glycol	PO	200	●							560	60	
				400		●						280	70	
				600		●							187	85
				950			●						118	140
				1000			●						112	145
				1200				●					98	165
				3000					●				35	590
				4000							●		27	990
	3	SANNIX GP	Glycerin	PO or EO/PO	250	●						670	950	
400						●						400	365	
600						●							280	275
700							●						240	250
1000							●						160	255
1500								●					112	300
3000									●				56	500
3000R									●				56	510
3700M											●		45	645
4000												●	42	660
	SANNIX TP	Trimethylol propane	PO	400		●					395	700		
	SANNIX AP	Aliphatic amine	PO	470		●					360	350		
6	SANNIX SP	Sorbitol	PO	750			●				490	16,000 ^{*3}		

Continued on the next page →

FG ^{*1}	Product Name	Composition		No.	Number Average Molecular Weight (Mn)						Property			
		Active Hydrogen Compound	Alkylene Oxide ^{*2}		- 300	300 - 600	600 - 1000	1000 - 2000	2000 - 3000	> 3000	OHV	Viscosity mPa · s (25°C)		
Non-disclosure	SANNIX HM	Aromatic amine-based	EO/PO	551								400	22,500	
	SANNIX NE	Aliphatic amine-based	EO	240								970	3,700	
	SANNIX NL	Aliphatic amine-based		EO/PO	270								812	8,250
				EO/PO	300								746	4,600
	SANNIX NP	Aliphatic amine-based	PO	300								755	1,680 ^{*4}	
	SANNIX FA	Proprietary active hydrogen compound	-		103								50	730
					226								60	450
					311E								42	970
					702								38	900
					703								33	910
					718								29	800
					757								32	1,100
					921								28	1,155
					951								34	800
					7030								28	1,300
	SANNIX KC				720								34	880
				745								34	900	
				900 ^{*5}								22	4,800	
SANNIX GS			3000R								56	475		

*1 Number of functional group *2 EO: Ethylene oxide/PO: Propylene oxide *3 Viscosity[mPa · s (30°C)]
*4 Kinetic viscosity[mm²/s (50°C)] *5 Polymer polyol

NEWPOL 50HB, LB, 75H-90000, V Products

Used for wetting agent, moisturizer, releasing lubricant, deformer, raw material for lubricant or hydraulic oil, emulsion breaker or heating medium.

FG ¹	Product Name	Composition		No.	Property			
		Active Hydrogen Compound	Alkylene Oxide ²		Mn ³	Kinetic Viscosity mm ² /s		Pour Point °C
						(20°C)	(40°C)	
1	NEWPOL 50HB	Monoalcohol	EO/PO	55	300	16	8	≤-50
				260	970	119	51	-49
				400	1,340	192	80	-48
				660	1,800	343	127	-45
				2000	3,200	1,004	398	-35
				5100	3,750	2,263	925	-30
	NEWPOL LB	Monoalcohol	PO	65	340	18	9	≤-50
				285	1,170	161	59	≤-50
				300X	1,170	171	65	≤-50
				385	1,480	190	80	-43
				625	1,870	325	120	-40
				650X	1,870	344	130	-40
				1715	2,390	980	335	-38
				1800X	2,390	1,014	351	-38
3000	3,070	1,665	610	-30				
2	NEWPOL 75H	Hexylene glycol	EO/PO	90000	14,000	56,200	19,000	-3
-	NEWPOL V	Multi-functional alcohol	EO/PO	10-C	22,400	-	3,300 ⁴	-10
				22F ⁵	-	-	1,950	-

*1 Number of functional group *2 EO: Ethylene oxide/PO: Propylene oxide *3 Number average molecular weight
 *4 100°C Kinetic viscosity[mm²/s(100°C)] *5 50 wt % aq solution

NEWPOL PE Products

Used for detergent, raw-material for detergent, quasi-drugs, textile agent, emulsifier, dispersant, solubilizer or antistatic agent.

FG ¹	Product Name	Composition	No.	Property				
				Appearance (20±5°C)	Color (hazen)	Cloud Point (°C) 1% aq sol.	Workability °C	Mn ⁷
2	NEWPOL PE	Polyoxyethylene - Polyoxypropylene Block Polymer	34	Colorless liquid	10	63	-1 ⁴	1,700
			61	Colorless liquid	10	24	-30 ⁴	2,000
			62	Colorless liquid	10	30	-4 ⁴	2,400
			64	Colorless paste	10	59	30 ⁵	3,100
			68	White flake	10 ²	113 ³	53 ⁶	8,000
			71	Colorless liquid	10	21	-30 ⁴	2,200
			74	Colorless paste	10	56	20~25 ⁵	3,100
			75	Colorless paste	10	69	20~25 ⁵	3,500
			78	White flake	10 ²	110 ³	54 ⁶	9,400
			108	White flake	10 ²	105 ³	57 ⁶	16,000
			128	White flake	10 ¹	100 ²	62 ⁶	-

*1 Number of functional group *2 25 wt % aq solution *3 Measured in a sealed tube *4 Freezing point
 *5 Pour point *6 Melting point *7 Number average molecular weight

NEWPOL BP, BPE Products

Used for raw material for resins or organic intermediate, resin improver, etc.

FG ¹	Product Name	Composition		No.	Property				
		Active Hydrogen Compound	Alkylene Oxide ²		Mn ³	Appearance (20±5°C)	OHV	Color (hazen)	Viscosity mPa · s (60°C)
2	NEWPOL BP		PO	2P	350	Pale yellow liquid ⁴	322	40	1,600
				23P	400	Colorless liquid ⁴	310	20	1,230
				3P	530	Colorless liquid	280	20	800
				5P	560	Colorless liquid	211	10	180
				20	330	White block	343	30 ⁵	
	NEWPOL BPE	Bisphenol A	EO	20NK	325	White block	345	30 ⁵	
				20T	320	White granule	349	10 ⁵	
				40	410	Colorless liquid	276	20	278
				60	490	Colorless liquid	228	10	174
				100	670	Colorless liquid	167	10	120
				180	1,020	Colorless liquid	110	10	130

*1 Number of functional group *2 PO: Propylene oxide/EO: Ethylene oxide *3 Number average molecular weight/calculated by OHV
 *4 Solid at 20°C *5 Molten, measured at 110°C

NEWPOL PP, GP Products

Used as wetting agent, moisturizer, surfactants, raw material for surfactants, synthetic lubricating oils or releasing lubricant. Some NEWPOL PP is also used as wetting agent for cosmetics and raw material for cosmetics.

FG ¹	Product Name	Composition	No.	Property				
				Appearance (20±5°C)	pH	Viscosity mPa · s (25°C)	Mn ²	Specific Gravity (20/20°C)
2	NEWPOL PP	Propylene oxide adduct of propylene glycol	200	Colorless liquid	6.2	60	200	1.015
			400	Colorless liquid	6.0	69	400	1.013
			600	Colorless liquid	6.5	85	600	1.020
			1000	Colorless liquid	6.4	150	1,000	1.009
			2000	Colorless liquid	6.5	310	2,000	1.006
			3000	Colorless liquid	6.3	590	3,200	1.005
3	NEWPOL GP	Propylene oxide adduct of glycerin	4000	Colorless liquid	6.3	950	4,150	1.004
			400	Colorless liquid	6.5	370	420	1.055
			600	Colorless liquid	6.3	280	600	1.042
			1000	Colorless liquid	6.3	260	1,050	1.025
4000	Colorless liquid	6.4	660	4,000	1.011			

*1 Number of functional group *2 Number average molecular weight/calculated by OHV

Examples of Sanyo Chemical Nonionic Surfactants The List of their HLB

HLB (Hydrophile-Lipophile Balance) is a numerical value which represents a balance between hydrophilic groups and lipophilic groups in molecules of surfactants from 0 to 20.

The higher the HLB value, the more hydrophilic (water-soluble) the surfactant.

How to see the table

The second line shows the trade names of products, and each product number is in the corresponding cell in the following lines after line 4. For example, the cell at column 3/line 11 represents NAROACTY ID-40. The cell at column 6/line 11 represents SANNONIC SS-30.

	HLB	Synthetic Alcohol-based					Natural Alcohol-based			Fatty Acid Ester-based		Pluronic	
		NAROACTY		SANNONIC		SEDORAN		EMULMIN			IONET		NEWPOL
		Primary Alcohol		Primary Alcohol	Secondary Alcohol	Primary Alcohol	Secondary Alcohol	-C12-	-C16-	C16-C18	PEG Ester	Sorbitan	
Lipophilic	1.8 - 2.0										S-85	PE-61 PE-71	
	4.0 - 4.3										S-80	PE-62	
	4.7										S-60V		
	5.7		CL-20										
	6.0 - 6.2					SF-506							
	6.6												
	7.3									DS-300			
	8.0 - 8.2	ID-40			SS-30				40	DS-400		PE-34 PE-64 PE-74	
	8.3 - 8.6									MO-200 DO-400	S-20		
	8.9 - 9.0		CL-40										
10.0 - 10.2		CL-50									PE-75		
10.5 - 10.6				SS-50									
10.9													
11.7		CL-70	FN-80		FF-180				MO-400				
12.0				SS-70					MS-400				
12.3 - 12.4	ID-60				FF-200								
12.6		CL-85	FN-100										
12.9 - 13.0					FF-210								
13.1 - 13.2	ID-70	CL-95	DE-70	SS-90									
13.3 - 13.4		CL-100											
13.6													
13.8 - 14.0			FN-140		FF-220								
14.1 - 14.3		CL-120											
14.5				SS-120									
14.7 - 14.9		CL-140								T-60V			
15.0 - 15.3		CL-160						180		T-80V	PE-108 PE-128		
15.5 - 15.7								CC-200	MS-1000		PE-68 PE-78		
16.0		CL-200						240					
16.6 - 16.7									DS-4000	T-20C			
17.8		CL-400											
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