

# PRODUCTLIST

## 1 PERFORMANCE CHEMICALS FOR SYNTHETIC RESIN & RUBBER INDUSTRIES AND PAINT, INK & PIGMENT INDUSTRIES

1. Curing Agents for Epoxy Resins and Epoxy Resin Enamels
2. Pigment Dispersants (Oligomer Type)
3. Emulsifiers for Emulsion Polymerization
4. Stabilizer for Emulsions and Latexes
5. Resin Modifiers
6. Internal Antistatic Agents
7. Mold Releasing Agents
8. Printing Ink Binders
9. Compounding Ingredients for Paints and Printing Inks
10. Polyurethane Coating Materials
11. Pigment Dispersants (Surfactant Type)
12. Defoaming Agents
13. Plasticizer for Polyurethane-Based Sealant

## 2 PERFORMANCE CHEMICALS FOR COSMETICS, PHARMACEUTICALS, DETERGENTS AND AGRICHEMICALS

### Performance Chemicals for Cosmetics

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2. Base Materials for Shampoos (Amphoteric Type)
3. Foam Stabilizers and Thickeners for Shampoos
4. Base Materials for Body Washes
5. Base Materials for Hair Conditioners
6. Compounding Ingredients for Cosmetics
7. Emulsifiers for Cosmetics

### Performance Chemicals for Pharmaceuticals

1. Tablet Binders
2. Base Materials for Ointments
3. Coating Agents for Tablets
4. Germicides (Pharmaceutical Use)
5. Other Products for Pharmaceuticals

### Performance Chemicals for Detergents

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2. Germicides (Industrial Use)
3. Additives for Detergents
4. Base Materials for Household Softeners
5. Industrial Defoaming Agents

### Performance Chemicals for Agrichemicals

1. Emulsifiers for Emulsifiable Concentrates
2. Dispersants for Granule Preparations

## 3 PERFORMANCE CHEMICALS FOR POLYURETHANE AND POLYURETHANE-RELATED INDUSTRIES

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## 4 PERFORMANCE CHEMICALS FOR LUBRICANT INDUSTRIES AND MACHINERY & METAL PROCESSING INDUSTRIES

1. Lubricating Oil Additives
2. Base Materials for Polyalkylene Glycol-Type Lubricants
3. Base Materials for Water-Soluble Quenchants
4. Base Materials for Hydraulic Fluids
5. Materials for Brake Fluids
6. Rust Inhibitors
7. Water-Soluble Cutting Fluids
8. Emulsifiers for Metal Working Oils
9. Base Materials for Metal Cleaners

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### Polymer Flocculants

## 8 PERFORMANCE CHEMICALS FOR CONSTRUCTION AND PUBLIC WORKS

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3. Dry Laminate Adhesives for Food-Packaging Films
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5. Resins for Anti-Corrosion Paints for Automobiles  
(for Improving Adhesion of Paints to Electrodeposition Steel)
6. Binders for Fiber-Finishing Agents
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8. Binders for Fiberglass
9. Curing Agents for Epoxy Resins

## 10 PERFORMANCE CHEMICALS FOR TEXTILE INDUSTRY

### Processes for Textile Manufacturing and Our Performance Chemicals

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2. Nylon Textile
3. Acrylic Textile
4. Cotton Textile
5. Wool Textile

### Performance Chemicals for Textile Industry

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2. Knitting and Weaving Oils
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4. Dyeing Auxiliaries
5. Softeners
6. Other Finishing Agents
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# 4

## PERFORMANCE CHEMICALS FOR LUBRICANT INDUSTRIES AND MACHINERY & METAL PROCESSING INDUSTRIES

1. Lubricating Oil Additives
2. Base Materials for Polyalkylene Glycol-Type Lubricants
3. Base Materials for Water-Soluble Quenchants
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5. Materials for Brake Fluids
6. Rust Inhibitors
7. Water-Soluble Cutting Fluids
8. Emulsifiers for Metal Working Oils
9. Base Materials for Metal Cleaners

### IMPORTANT :

Before handling these products, refer to the current Material Safety Data Sheet for recommended protective equipment, and detailed precautionary and hazards information.

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### 1-(1). Lubricating Oil Additives (See page 7.)

Product Name	Principal Component (Product Form)	Uses and Features
<b>ACLUBE P-2100</b>	Methacrylate copolymer (Liquid)	ACLUBE P-2100 is a pour point depressant, suitable for medium-high viscosity base oils. It exhibits high shear stability.
<b>ACLUBE P-4300</b>	Methacrylate copolymer (Liquid)	ACLUBE P-4300 is a pour point depressant, particularly suitable for medium-high viscosity base oils.
<b>ACLUBE P-4070</b>	Methacrylate copolymer (Liquid)	ACLUBE P-4070 is a pour point depressant, particularly suitable for medium base oils .
<b>ACLUBE P-2090</b>	Methacrylate copolymer (Liquid)	ACLUBE P-2090 is a pour point depressant, suitable for medium-high viscosity base oils. It exhibits high shear stability.
<b>ACLUBE P-D3000</b>	Methacrylate copolymer (Liquid)	ACLUBE P-D3000 is a pour point depressant, suitable for medium-high viscosity base oils. It exhibits high dispersibility.
<b>ACLUBE V-1040</b>	Methacrylate copolymer (Liquid)	ACLUBE V-1040 is a viscosity index improver, suitable for ATF*, CVTF**, gear oils and hydraulic fluids. It exhibits high shear stability.
<b>ACLUBE V-4000 V-4020 V-5040</b>	Methacrylate copolymer (Liquid)	These products are viscosity index improvers, suitable for ATF*, gear oils and hydraulic fluids. They exhibit high thickening and low-temperature properties.
<b>ACLUBE V-2041</b>	Methacrylate copolymer (Liquid)	ACLUBE V-2041 is a viscosity index improver, suitable for ATF*, CVTF**, gear oils and hydraulic fluids. It exhibits high shear stability and low-temperature properties.
<b>ACLUBE V-5000</b>	Methacrylate copolymer (Liquid)	ACLUBE V-5000 is a viscosity index improver, suitable for engine oils and hydraulic fluids. It exhibits high thickening and low-temperature properties.
<b>ACLUBE V-1030</b>	Methacrylate copolymer (Liquid)	ACLUBE V-1030 is a viscosity index improver, suitable for gear oils, ATF*, CVTF** and hydraulic fluids. It exhibits high shear stability.
<b>ACLUBE V-2010</b>	Methacrylate copolymer (Liquid)	ACLUBE V-2010 is a viscosity index improver, suitable for gear oils, ATF*, CVTF** and hydraulic fluids. It exhibits high shear stability and low-temperature properties.
<b>ACLUBE V-3020</b>	Methacrylate copolymer (Liquid)	ACLUBE V-3020 is a viscosity index improver, suitable for ATF*, gear oils and hydraulic fluids. It exhibits high thickening and low-temperature properties.
<b>ACLUBE V-2000</b>	Methacrylate copolymer (Liquid)	ACLUBE V-2000 is a viscosity index improver, suitable for gear oil, ATF*, CVTF** and hydraulic fluids. It exhibits high shear stability and low-temperature properties.
<b>ACLUBE V-D4020</b>	Methacrylate copolymer (Liquid)	ACLUBE V-D4020 is a viscosity index improver, suitable for ATF*, gear oils and hydraulic fluids. It exhibits high dispersibility, and thickening and low-temperature properties.
<b>ACLUBE V-D2000 V-D2020</b>	Methacrylate copolymer (Liquid)	These products are viscosity index improvers, suitable for ATF*, gear oils and hydraulic fluids. They exhibit high dispersibility, shear stability and low-temperature properties.

\* Automatic transmission fluids

\*\* Continuously variable transmission fluids

### 1-(2). Lubricating Oil Additives (See page 7.)

Product Name	Principal Component (Product Form)	Uses and Features
<b>ACLUBE V-5050</b>	Methacrylate copolymer (Liquid)	ACLUBE V-5050 is a viscosity index improver, suitable for engine oils and hydraulic fluids. It exhibits high thickening properties.
<b>ACLUBE V-5030</b>	Methacrylate copolymer (Liquid)	ACLUBE V-5030 is a viscosity index improver, suitable for engine oils and hydraulic fluids. It exhibits high shear stability and pour-point depressibility.
<b>ACLUBE V-D5040</b>	Methacrylate copolymer (Liquid)	ACLUBE V-D5040 is a viscosity index improver for engine oil, suitable for engine oils and hydraulic fluids. It exhibits high shear stability and dispersibility. It also exhibits high pour-point depressibility.
<b>ACLUBE V-D5020 V-D4000</b>	Methacrylate copolymer (Liquid)	These products are viscosity index improvers, suitable for engine oils and hydraulic fluids. They exhibit high dispersibility and pour-point depressibility.

### 2. Base Materials for Polyalkylene Glycol-Type Lubricants

Product Name	Principal Component (Product Form)	Uses and Features
<b>NEWPOL LB Products</b>	Polyoxypropylene diol monoalkyl ether (Liquid)	These products are polyalkylene glycol-type lubricants used for various purposes including compressor oil, gear oil and grease. They leave no residue after combustion. They cause practically no swelling and no shrinkage of natural or synthetic rubbers. When extremely high heat resistance is required, it is recommended to use NEWPOL LB products containing antioxidant that are suffixed with X as product names. See page 7. NEWPOL LB products: Insoluble in water NEWPOL 50HB products: Soluble in water
<b>NEWPOL 50HB Products</b>	Poly(oxyethylene, oxy-propylene) diol monoalkyl ether (Liquid)	NEWPOL 50HB products: Soluble in water
<b>NEWPOL 75H-90000</b>	Poly(oxyethylene, oxy-propylene) diol (Liquid)	NEWPOL 75H-90000 is polyalkylene glycol-type lubricant used for lithium soap grease as well as high temperature grease compounded with graphite or molybdenum sulfide. It is soluble in water.

### 3. Base Materials for Water-Soluble Quenchants

Product Name	Principal Component (Product Form)	Uses and Features
<b>NEWPOL 75H-90000</b>	Poly(oxyethylene, oxy-propylene) diol (Liquid)	The recommended concentration: 2–3 wt %. These products help to control the cooling rate of metals to be hardened including steel.
<b>NEWPOL 50HB Products</b>	Poly(oxyethylene, oxy-propylene) diol monoalkyl ether (Liquid)	NEWPOL 75H-90000: general-purpose type. NEWPOL NSQ-870: higher viscosity type of NEWPOL 75H-90000. NEWPOL 50HB products: low-viscosity type and resistant to heat deterioration. See page 7.
<b>PEG-20000</b>	Polyethylene glycol (Flake)	PEG-20000: used for extremely hard steel. NEWPOL V-22F: desirable cooling performance even when used at low concentration.
<b>NEWPOL NSQ-870</b>	Poly(oxyethylene, oxy-propylene) diol (Liquid)	
<b>NEWPOL V-22F</b>	Poly(oxyethylene, oxy-propylene) polyol (Liquid)	

#### 4. Base Materials for Hydraulic Fluids

Product Name	Principal Component (Product Form)	Uses and Features
<b>NEWPOL 75H-90000</b>	Poly(oxyethylene, oxy-propylene) diol (Liquid)	Base materials for water-and-glycol type hydraulic fluids. Excel in oiliness and load resistance.
<b>NEWPOL V-10-C</b>	Poly(oxyethylene, oxy-propylene) polyol (Liquid)	
<b>NEWPOL NSQ-800</b>	Poly(oxyethylene, oxy-propylene) polyol (Liquid)	Base materials for water-and-glycol type hydraulic fluids. Excel in wear resistance.

#### 5. Materials for Brake Fluids

Product Name	Principal Component (Product Form)	Uses and Features
<b>NEWPOL SBF-200</b>	Polyoxyalkylene diol mono-alkyl ether (Liquid)	NEWPOL SBF-200 is a solvent for brake fluid of high boiling point. When it is used with NEWPOL SBF-101, the mixture imparts a favorable degree of rubber swelling. Boiling point: higher than 240 °C. Kinematic viscosity (-40 °C): approx. 1100 mm <sup>2</sup> /s
<b>NEWPOL SBF-605</b>	Polyoxyalkylene diol mono-alkyl ether (Liquid)	NEWPOL SBF-605 is a solvent for brake fluid of high boiling point. It swells rubber to a favorable degree. Boiling point: approx. 253 °C. Kinematic viscosity (-40 °C): approx. 930 mm <sup>2</sup> /s
<b>NEWPOL SBF-650</b>	Polyoxyalkylene diol mono-alkyl ether borate (Liquid)	NEWPOL SBF-650 is a solvent for brake fluid of high boiling point. The depression of its boiling point is minimally affected by moisture absorption. Boiling point: approx. 258 °C. Kinematic viscosity (-40 °C): approx. 925 mm <sup>2</sup> /s
<b>BFA-3</b>	Proprietary compound (Liquid)	BFA-3 is a package type general-purpose additive for brake fluids with antioxidative and rust preventive properties. The recommended amount: 2–3 wt % for brake fluid.
<b>NEWPOL GEP-2800</b>	Poly(oxyethylene, oxy-propylene) triol (Liquid)	These products are base polymers for brake fluid. NEWPOL GEP-2800: water-soluble base polymer with high viscosity NEWPOL GP-3000: water-insoluble base polymer with high viscosity
<b>NEWPOL GP-3000</b>	Polyoxypropylene triol (Liquid)	NEWPOL 50HB products: water-soluble base polymer with low-medium viscosities.
<b>NEWPOL 50HB-260 50HB-400 50HB-660</b>	Poly(oxyethylene, oxy-propylene) diol monoalkyl ether (Liquid)	See page 7.

#### 6. Rust Inhibitors

Product Name	Principal Component (Product Form)	Uses and Features
<b>DSA</b>	Alkenyl succinic anhydride (Liquid)	DSA is an oil-soluble rust inhibitor, suitable for lubricating oil, hydraulic fluid, metal working oil, liquid fuel, mineral oil, turbine oil, etc. It has excellent rust preventive and demulsifying properties.
<b>SANHIBITOR 800</b>	Alkenyl succinic anhydride (Liquid)	SANHIBITOR 800 is a rust inhibitor, suitable for lubricating oil, hydraulic fluid, metal working oil, etc. It is soluble in aqueous alkaline solution.
<b>SANHIBITOR 150</b>	Alkenyl succinic acid ester (Liquid)	SANHIBITOR 150 is an oil-soluble rust inhibitor. It imparts excellent rust preventive properties to lubricating oil such as turbine oil, and fuel oil with the use of a small amount.
<b>SANHIBITOR 102</b>	Proprietary anionic surfactant (Liquid)	SANHIBITOR 102 is an oil-soluble rust inhibitor, suitable for turbine oil. Also, it is applicable for lubricating oil. It has excellent demulsifying properties.
<b>IONET S-80 S-80S</b>	Sorbitan monooleate (Liquid)	These products have excellent rust preventive, lubricating and emulsifying properties. They are effective as additives for rust preventive oil and metal working oil.
<b>SANHIBITOR No.2-1</b>	Proprietary anionic surfactant (Liquid)	SANHIBITOR No.2-1 is a water-soluble and oil-soluble rust inhibitor. It has excellent rust-preventive properties on both ferrous and non-ferrous metals. It produces less foam. The recommended concentration: 0.2–0.5 wt %.
<b>SANHIBITOR No.50</b>	Proprietary nonionic surfactant (Liquid)	SANHIBITOR No.50 is water-soluble rust inhibitor. It produces less foam and is easily rinsed. It has excellent rust preventive properties and is resistant to heat and alkaline solution. It is substitutable for alkanol amine. The recommended concentration: 0.2–0.5 wt %.
<b>SANHIBITOR OMA-10</b>	Proprietary anionic surfactant (Liquid)	SANHIBITOR OMA-10 is a water-soluble rust inhibitor, suitable for metal working oil. It prevents rust even on nonferrous metals. The recommended concentration: 0.3–0.5 wt %.

## 7. Water-Soluble Cutting Fluids

Product Name	Principal Component (Product Form)	Uses and Features
<b>HIGHCLEAN CF-1 CFK</b>	Proprietary compound mainly composed from anionic surfactant (Liquid)	These products are suitable for light-duty cutting including aluminum alloy. They exhibit high lubricities, cooling effects, rust preventive properties and putrefaction resistance.
<b>HIGHCLEAN CE-100</b>	Proprietary anionic surfactant (Liquid)	HIGHCLEAN CE-100 is suitable for cutting of steel, and aluminum alloy. It exhibits high lubricities, cooling effects, rust preventive properties and putrefaction resistance.
<b>HIGHCLEAN CF-50</b>	Proprietary anionic surfactant (Liquid)	HIGHCLEAN CF-50 is suitable for cutting of cast iron. It exhibits high lubricities, cooling effects, rust preventive properties and putrefaction resistance. The working solution does not discolor, because it is rust preventive.
<b>HIGHCLEAN MHD-35</b>	Proprietary anionic surfactant (Liquid)	HIGHCLEAN MHD-35 is suitable for cutting of steel alloy and cast iron. It exhibits high lubricities, cooling effects, rust preventive properties and putrefaction resistance.
<b>HIGHCLEAN S-7001</b>	Proprietary anionic surfactant (Liquid)	HIGHCLEAN S-7001 is suitable for light-duty cutting of steel and steel alloy. It exhibits high rust preventive properties and putrefaction resistance. The residual fluid is easily washed off from the processed metal parts.

## 8. Emulsifiers for Metal Working Oils

Product Name	Principal Component (Product Form)	Uses and Features
<b>NAROACTY CL Products</b>	Polyoxyalkylene alkyl ether (Liquid or solid)	NAROACTY CL products are suitable for producing various emulsifiers because they have a wide range of HLB values. Emulsion-type lubricating oil is produced when they are used with mineral oil. NAROACTY CL-40, CL-50 and CL-70 are applicable as emulsifiers for mineral oil. See page 8.
<b>EMULMIN No. Products</b>	Polyoxyethylene diol higher alkyl ether (Liquid, paste or solid)	EMULMIN No. products are emulsifiers for mineral oil, and fats and oils. EMULMIN 50, 60 and 70 are useful as emulsifiers for mineral oil, while EMULMIN 70, 110 and 140 are suitable as emulsifiers for fats and oils. See page 8.
<b>IONET D Products M Products</b>	Polyoxyethylene diol fatty acid ester (Liquid or solid)	These products are used as emulsifiers and oiliness improvers for metal working oil. They have low toxicity and low irritancy. See page 8.

## 9. Base Materials for Metal Cleaners

Product Name	Principal Component (Product Form)	Uses and Features
<b>NEWPOL PE Products</b>	Polyoxyethylene polyoxypropylene glycol (Liquid, paste or flake)	NEWPOL PE products are suitable as cleaner bases for spray cleaning. They are stable in wide pH range, and produce less foam. See page 9.
<b>SEDORAN FF-180 FF-200 FF-210 FF-220</b>	Proprietary nonionic surfactant (Liquid)	These products are suitable as cleaner bases for automatic cleaning, such as jet-cleaning and spray cleaning. They are stable in wide pH range. They produce less foam and have high detergency and wettability.
<b>SEDORAN SF-506</b>	Proprietary nonionic surfactant (Liquid)	SEDORAN SF-506 is suitable as a base material for acid detergent and alkaline degreasing agent, and a cleaner base for spray cleaning. It has high detergency and produces less foam.
<b>SEDORAN SNP-112</b>	Proprietary nonionic surfactant (Liquid)	SEDORAN SNP-112 is suitable as a base material for acid detergents and alkaline degreasing agents. It has high detergency, produces less foam, and is easily biodegradable.
<b>SANNONIC Products</b>	Polyoxyalkylene alkyl ether (Liquid)	SANNONIC products are less corrosive to metals, suitable as base materials for acid/alkaline detergents. They are also applicable as oiliness improvers, and emulsifiers for rolling oil and cutting oil. See page 9.
<b>NAROACTY CL Products</b>	Polyoxyalkylene alkyl ether (Liquid or solid)	NAROACTY CL products are less corrosive to metals, suitable as base materials for acid/alkaline detergents. They are also applicable as oiliness improvers and emulsifiers for rolling oil and cutting oil. See page 8.
<b>CHEMICLEAN MS-109</b>	Proprietary surfactant (Liquid)	CHEMICLEAN MS-109 is suitable as a leaner base for spray cleaning at temperatures lower than 40 °C. It produces less foam.

## Appendix

### 1. Typical Properties of ACLUBE Products

Product Name	Appearance (20°C ± 5°C)	Color (ASTM)	Density g/cm <sup>3</sup> (15°C)	Kinematic Viscosity mm <sup>2</sup> /s (100°C)	Neutralization Number
ACLUBE P-2100	Straw-colored liquid	0.5	0.911	380	0.1
ACLUBE P-4300		0.5	0.893	300	0.1
ACLUBE P-4070		0.5	0.907	480	0.1
ACLUBE P-2090		0.5	0.913	300	0.1
ACLUBE P-D3000		0.5	0.918	550	0.1
ACLUBE V-4000		0.5	0.909	850	0.1
ACLUBE V-4020		0.5	0.909	530	0.1
ACLUBE V-5040		0.5	0.900	1,000	0.1
ACLUBE V-5000		0.5	0.919	1,400	0.1
ACLUBE V-1030		0.5	0.921	260	0.1
ACLUBE V-1040		0.5	0.932	510	0.2
ACLUBE V-2010		0.5	0.927	430	0.1
ACLUBE V-2000		0.5	0.938	645	0.1
ACLUBE V-D4020		0.5	0.917	720	0.2
ACLUBE V-D4000		1.0	0.903	1,210	0.2
ACLUBE V-D2000		0.5	0.932	350	0.2
ACLUBE V-D2020		0.5	0.934	360	0.2
ACLUBE V-D5020		0.5	0.910	1,400	0.1
ACLUBE V-2041		0.5	0.942	850	0.1
ACLUBE V-3020		0.5	0.930	720	0.2
ACLUBE V-D5040		0.5	0.911	1,460	0.2
ACLUBE V-5030		0.5	0.912	1,640	0.2
ACLUBE V-5050		0.5	0.904	1,730	0.2

### 2. Typical Properties of NEWPOL LB Products and NEWPOL 50HB Products

Product Name	Appearance (20°C ± 5°C)	Pour Point °C	Kinematic Viscosity mm <sup>2</sup> /s (40°C)	Flash Point °C
NEWPOL LB-65	Colorless to pale yellow liquid	-55	9	148
NEWPOL LB-285		-40	59	217
NEWPOL LB-385		-37	74	220
NEWPOL LB-625		-33	120	222
NEWPOL LB-1715		-22	342	228
NEWPOL LB-3000		-19	610	230
NEWPOL LB-300X		-40	65	236
NEWPOL LB-650X		-29	130	252
NEWPOL LB-1800X		-22	351	258
NEWPOL LB-400XY		-35	84	215
NEWPOL 50HB-55		-65	8	93
NEWPOL 50HB-100		-51	19	183
NEWPOL 50HB-260		-40	51	225
NEWPOL 50HB-400		-37	80	246
NEWPOL 50HB-660		-34	127	225
NEWPOL 50HB-2000		-31	398	233
NEWPOL 50HB-5100		-28	925	251

### 3. Typical Properties of NAROACTY CL Products

Product Name	Appearance (20°C ± 5°C)	pH (1 wt % aq soln)	HLB	Cloud Point °C (2 wt % aq soln)	
NAROACTY CL-20	Colorless to pale yellow liquid	6.5	5.7	< 20	
NAROACTY CL-40		6.5	8.9	< 20	
NAROACTY CL-50		6.5	10.0	< 20	
NAROACTY CL-70		6.5	11.7	< 20	
NAROACTY CL-85		6.5	12.6	41	
NAROACTY CL-95		6.5	13.1	54	
NAROACTY CL-100		6.5	13.3	64	
NAROACTY CL-120		6.5	14.1	80	
NAROACTY CL-140		White solid	6.5	14.7	93
NAROACTY CL-160			6.5	15.2	99
NAROACTY CL-200	6.5		16.0	> 100	
NAROACTY CL-400	White flake	6.5	17.8	> 100	

### 4. Typical Properties of EMULMIN No. Products

Product Name	Appearance (20°C ± 5°C)	pH (1 wt % aq soln)	HLB	Cloud Point °C (2 wt % aq soln)
EMULMIN 40	Pale yellow liquid	7.0	8.0	< 20
EMULMIN 50	Straw-colored liquid	7.0	9.0	< 20
EMULMIN 60	Pale straw-colored liquid	7.0	10.2	< 20
EMULMIN 70		5.0	10.8	< 20
EMULMIN 110	Pale yellow liquid to paste	7.0	13.2	78
EMULMIN 140		7.0	14.2	91
EMULMIN 180	White to pale yellow wax	7.0	15.1	> 100
EMULMIN 200		7.0	15.5	> 100
EMULMIN 240		7.0	16.1	> 100

### 5. Typical Properties of IONET M Products and IONET D Products

Product Name	Principal Component	Appearance (20°C ± 5°C)	pH (1 wt % aq soln)	HLB	Cloud Point °C (2 wt % aq soln)
IONET MS-400	Polyoxyethylene monostearate	Pale yellow solid	7.0	11.9	< 20
IONET MS-1000			6.5	15.7	> 100
IONET MO-200	Polyoxyethylene monooleate	Pale straw-colored liquid	7.0	8.4	< 20
IONET MO-400		Straw-colored liquid	7.0	11.8	< 20
IONET MO-600	6.2		13.7	53	
IONET DL-200	Polyoxyethylene dilaurate	Pale yellow liquid	6.5	6.6	< 20
IONET DS-300	Polyoxyethylene distearate	Pale yellow solid	7.0	7.3	< 20
IONET DO-400	Polyoxyethylene dioleate	Pale straw-colored liquid	7.0	8.4	< 20
IONET DO-600		Brown liquid	6.5	10.4	< 20
IONET DO-1000		Pale yellow solid	6.5	12.9	35

## 6. Typical Properties of NEWPOL PE Products

Product Name	Appearance (20°C ± 5°C)	pH (1 wt % aq soln)	Cloud Point °C (1 wt % aq soln)	Foaming Property *1			
				0.1 wt % Aq Soln		1.0 wt % Aq Soln	
				Immediate	After 5 min	Immediate	After 5 min
<b>NEWPOL PE-61</b>	Colorless to pale yellow liquid	6.0	24	18	0	9	0
<b>NEWPOL PE-62</b>		6.0	30	21	4	25	5
<b>NEWPOL PE-64</b>	Colorless to pale yellow paste	6.5	59	28	7	34	10
<b>NEWPOL PE-68</b>	White flake	7.0	113	48	12	53	14
<b>NEWPOL PE-71</b>	Colorless to pale yellow liquid	6.0	20	*2			
<b>NEWPOL PE-74</b>	Colorless to pale yellow paste	6.0	56	30	7	46	8
<b>NEWPOL PE-75</b>		6.0	69	32	13	45	29
<b>NEWPOL PE-78</b>	White flake	7.0	110	48	12	55	15
<b>NEWPOL PE-108</b>		7.0	105	48	12	53	15

\*1 Foam height in mm at 20°C measured with the Ross-Miles method

\*2 Not evaluated because NEWPOL PE-71 is used as defoamer.

## 7. Typical Properties of SANNONIC Products

Product Name	Appearance (20°C ± 5°C)	pH (1 wt % aq soln)	HLB	Cloud Point °C (2 wt % aq soln)
<b>SANNONIC SS-50</b>	Pale yellow liquid	5.5*	10.5	< 20
<b>SANNONIC SS-70</b>		6.5*	12.1	33
<b>SANNONIC SS-90</b>		6.5*	13.2	56
<b>SANNONIC SS-120</b>	White liquid	6.5*	14.5	83
<b>SANNONIC SD-50</b>	Colorless to pale yellow liquid	7.0	10.6	< 20
<b>SANNONIC FN-80</b>	Pale yellow liquid	6.5	-	34
<b>SANNONIC FN-100</b>		6.5	-	56
<b>SANNONIC FN-140</b>		6.5	-	81

\* 5 wt % aqueous solution

## ALPHABETICAL INDEX

ACLUBE P-2090	1, 7	NAROACTY CL-140	5, 6, 8
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ACLUBE P-4070	1, 7	NAROACTY CL-200	5, 6, 8
ACLUBE P-4300	1, 7	NAROACTY CL-400	5, 6, 8
ACLUBE P-D3000	1, 7	NEWPOL 50HB-55	2, 7
ACLUBE V-1030	1, 7	NEWPOL 50HB-100	2, 7
ACLUBE V-1040	1, 7	NEWPOL 50HB-260	2, 3, 7
ACLUBE V-2000	1, 7	NEWPOL 50HB-400	2, 3, 7
ACLUBE V-2010	1, 7	NEWPOL 50HB-660	2, 3, 7
ACLUBE V-2041	1, 7	NEWPOL 50HB-2000	2, 7
ACLUBE V-3020	1, 7	NEWPOL 50HB-5100	2, 7
ACLUBE V-4000	1, 7	NEWPOL 75H-90000	2, 3
ACLUBE V-4020	1, 7	NEWPOL GEP-2800	3
ACLUBE V-5000	1, 7	NEWPOL GP-3000	3
ACLUBE V-5030	2, 7	NEWPOL LB-65	2, 7
ACLUBE V-5040	1, 7	NEWPOL LB-285	2, 7
ACLUBE V-5050	2, 7	NEWPOL LB-300X	2, 7
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ACLUBE V-D4020	1, 7	NEWPOL LB-650X	2, 7
ACLUBE V-D5020	2, 7	NEWPOL LB-1715	2, 7
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HIGHCLEAN CF-50	5	NEWPOL SBF-650	3
HIGHCLEAN CFK	5	NEWPOL V-10-C	3
HIGHCLEAN MHD-35	5	NEWPOL V-22F	2
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