



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

- 1. Emulsifiers for Emulsion Polymerization**
- 2. Pigment Dispersants (Oligomer Type)**
- 3. Resin Modifiers**
- 4. Antistatic Agents**
- 5. Mold Releasing Agents**
- 6. Printing Ink Binders**
- 7. Compounding Ingredients for Paints and Printing Inks**
- 8. Pigment Dispersants (Surfactant Type)**
- 9. Defoaming Agents**
- 10. Plasticizers for Polyurethane-Based Sealants**

### ***IMPORTANT :***

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

# **SANYO CHEMICAL PRODUCT OUTLINE**

## 1. Emulsifiers for Emulsion Polymerization

Product Name	Principal Component (Product form)	Uses and Features
<b>NAROACTY CL Products</b>	Polyoxyalkylene alkyl ether (Liquid, Paste, Solid and Flake)	NAROACTY CL products have a wide range of HLB values, being used alone or in combination with anionic surfactants as emulsifiers for emulsion polymerization of vinyl acetate, acrylic esters, etc. See page 5.
<b>NEWPOL PE-64 PE-68</b>	Block polymer of polyoxyethylene and polyoxypropylene (Liquid, Flake)	These products are low-foaming emulsifiers used alone or in combination with anionic surfactants in emulsion polymerization of vinyl acetate, or acrylic ester. They effectively lower surface tension of emulsions.
<b>SANDET EN</b>	Sodium salt of alkyl ether sulfate (Liquid)	SANDET EN is used alone or in combination with nonionic surfactants in emulsion polymerization of vinyl acetate, acrylic esters, etc. It performs like both nonionic and anionic emulsifiers and is useful in developing various emulsions with excellent chemical stability.
<b>SANDET ONA</b>	Sodium salt of alkylsulfate (Liquid)	SANDET ONA is used alone or in combination with nonionic surfactants in emulsion polymerization of vinyl acetate, acrylic ester, vinylidene chloride, etc. It produces emulsion with relatively large particles.
<b>SANMORIN OT-70</b>	Sodium dioctyl sulfosuccinate (Liquid)	SANMORIN OT-70 is used alone or in combination with any surfactants (except cationic) as a wetting agent, penetrating agent, laundry detergent, industrial detergent, emulsifier, etc. It excels in the ability to lower surface tension and exhibits excellent wetting and penetrating properties.
<b>ELEMINOL JS-20</b>	Sodium alkyl allyl sulfosuccinate (Liquid)	ELEMINOL JS-20 is a copolymerizable emulsifier, used alone or in combination with other nonionic surfactants in emulsion polymerization of vinyl acetate, styrene, ethyl acrylate, butyl acrylate, etc. The resulting emulsion has low viscosity, produces less foam, and is mechanically stable against phase separation. The resulting film has high water resistance.
<b>ELEMINOL RS-3000</b>	Sodium methacryloxypolyoxy- propylene sulfonate (Liquid)	

## 2. Pigment Dispersants (Oligomer Type)

Product Name	Principal Component (Product form)	Uses and Features
<b>SANWAX Products</b>	Low-molecular-weight polyethylene (Powder, Pellet)	SANWAX products include pigment dispersants and flow improvers, suitable for polymers such as PE, PP, PVC, and ABS. As an additive for use in printing ink and paint, they can improve abrasion resistance, and anti-scratching, anti-blocking (anti-sticking) and anti-slipping properties of printed or painted surfaces. They are also useful as delustering agents. See page 5.
<b>VISCOL Products</b>	Low-molecular-weight polypropylene (Powder)	VISCOL products permit uniform dispersion of pigments and fillers into molten synthetic resins like PP. As an additive for use in printing ink and paint, they can improve abrasion resistance, and anti-scratching, anti-blocking (anti-sticking) and anti-slipping properties of printed or painted surfaces. They are also useful as delustering agents. See page 5.
<b>UMEX Products</b>	Acid modified low-molecular- weight polyolefin (Granule, Powder)	UMEX products are a series of acid modified low-molecular-weight polyolefin containing a carboxylic acid anhydride group as the functional group.  These products have a higher degree of modification and lower melt viscosity compared with conventional acid modified polyolefin. These products impart high dispersibility to both pigments and fillers in resins, and the mixture readily adheres to other materials including paint film. See page 6.

### 3. Resin Modifiers

Product Name	Principal Component (Product form)	Uses and Features
<b>NEWPOL BP Products</b>	Bis (hydroxyphenyl) propane, propoxylated (Liquid)	These products are alkylene oxide adducts of bisphenol-A, used for a wide range of applications such as raw materials for resins, raw materials of intermediates, and resin modifiers. For example, they can be used as a diol component for corrosion resistant grade unsaturated polyester resins. They are also useful as modifiers for polyether, epoxy resins, and polyurethane. See page 5 and 6.
<b>NEWPOL BPE Products</b>	Bis (hydroxyphenyl) propane, ethoxylated (Granule, Liquid)	
<b>UMEX Products</b>	Acid modified low-molecular-weight polyolefin (Granule, Powder)	When UMEX 1010 is added to a mixture of ethylene propylene rubber and polypropylene, the surface of the molded resin is modified. The contact angle of liquid on the molded resin also decreases. Consequently, adhesion of the resin to a high polar paint (melamine type, polyurethane type, etc.) is improved dramatically. When either UMEX 100TS or UMEX 110TS is added to hot melt adhesives, the workability of the adhesives is enhanced because their melt viscosity decreases compared with a mixture of a viscosity depressant (low molecular polyolefin type), including polyethylene wax, furthermore, the UMEX products improve the peel strength and creep resistance. See page 6.

### 4. Antistatic Agents

Product Name	Principal Component (Product form)	Uses and Features
<b>CHEMISTAT 3033</b>	Anionic surfactant (Granule)	Excellent heat resistance. Effective when used with resins having a high Tg (inappropriate for transparent products).
<b>CHEMISTAT 2500</b>	Nonionic surfactant (Liquid)	Has a relatively high antistatic property. Applicable in both kneading and coating processes.
<b>CHEMISTAT 3500</b>	Anionic surfactant (Paste)	Applicable to inks and paints.
<b>SANSTAT 2012A</b>	Cationic surfactant (Liquid)	Effective for almost all resins.
<b>PELESTAT NC6321 NC7530 230 300 VH230 HC6800</b>	Block-type thermoplastic elastomer (Pellet)	These products are polymer-alloy type permanent antistatic agents. They impart antistatic properties to resins, and their antistatic effects are long-lasting. PELESTAT NC6321, PELESTAT NC7530 and PELESTAT HC6800 are suitable for styrene resins, while PELESTAT 230, PELESTAT 300 and PELESTAT VH230 are suitable for polyolefin. See page 6.

## 5. Mold Releasing Agents

Product Name	Principal Component (Product form)	Uses and Features
<b>NEWPOL LB-625 LB-1715</b>	Polyoxypropylene glycol monoalkyl ether (Liquid)	These products are suitable for application to rubbers, plastics such as high speed tire molding, foam rubber, etc. They are used in organic solvent solution.
<b>NEWPOL 50HB-2000</b>	Poly (oxyethylene, oxypropylene) glycol monoalkyl ether (Liquid)	NEWPOL 50HB-2000 is suitable for application to rubber, plastics such as high speed tire molding, foam rubber, etc. It is used in aqueous solution.
<b>NEWPOL 50HB-5100</b>	Poly (oxyethylene, oxypropylene) glycol monoalkyl ether (Liquid)	NEWPOL 50HB-5100 is suitable for application to automotive radiator hose, household rubber hose, etc. It is used in aqueous solution.
<b>PEG 4000S 6000S</b>	Polyethylene glycol (Flake)	These products are suitable for application to both foam rubber and latex foam.

## 6. Printing Ink Binders

Product Name	Principal Component (Product form)	Uses and Features
<b>SANPRENE IB-422 IB-1700D IB-971 IB-972 IB-974</b>	Polyurethane resin solution (Liquid)	SANPRENE IB products are binders for special gravure printing inks. They exhibit high adhesion to polyester or nylon film, heat resistance and oil resistance. They are also suitable for polyurethane lamination film. SANPRENE IB-422 is an one-component type, and the rest of the SANPRENE IB products in the list are a two-component curing type. See page 6.

## 7. Compounding Ingredients for Paints and Printing Inks

Product Name	Principal Component (Product form)	Uses and Features
<b>SANWAX Products</b>	Low-molecular-weight polyethylene (Powder, Pellet)	These products are additives used in printing ink and paint to improve abrasion resistance, and anti-scratching, anti-blocking (anti-sticking) and anti-slipping properties of printed or painted surfaces. They are also suitable as a delustering agent. See page 5.
<b>VISCOL Products</b>	Low-molecular-weight polypropylene (Powder)	

## 8. Pigment Dispersants (Surfactant Type)

Product Name	Principal Component (Product form)	Uses and Features
<b>SANSPEARL PS-2</b>	Polycarboxylic acid type high molecular surfactant (Liquid)	SANSPEARL PS-2 is a high performance pigment dispersant. In particular, the resulting mixture has excellent viscosity and stability during storage and heating. It excels in the ability to reduce the viscosity of pigment slurry.
<b>SANMORIN OT-70</b>	Sodium dioctyl sulfosuccinate (Liquid)	SANMORIN OT-70 is a pigment dispersant. It exhibits excellent wetting and penetrating properties for hydrophobic pigments.
<b>IONET D Products M Products</b>	Polyoxyethylene fatty acid ester (Solid, Liquid)	These products are general-purpose pigment dispersants. A variety of products are available. See page 6.
<b>IONET S-80</b>	Sorbitan fatty acid ester (Liquid)	IONET S-80 is a pigment dispersant effective in organic solvents.
<b>IONET T-60V</b>	Polyethoxylated sorbitan fatty acid ester (Liquid)	IONET T-60V is a pigment dispersant effective in aqueous solution.

## 9. Defoaming Agents

Product Name	Principal Component (Product form)	Uses and Features
<b>COLORIN 302</b>	Derivative of polyalkylene glycol (Liquid)	COLORIN 302 is an economical defoaming agent for manufacture of acrylonitrile. It exhibits high defoaming properties, improving product yield and working efficiency.
<b>COLORIN EM-104</b>	Proprietary formulated product (Liquid)	COLORIN EM-104 is a defoaming agent for the manufacturing process of latex. It exhibits high defoaming properties, improving product yield and working efficiency.

## 10. Plasticizers for Polyurethane-Based Sealants

Product Name	Principal Component (Product form)	Uses and Features
<b>SANFLEX SPX-80N</b>	Polyether (Liquid)	These products are plasticizers for polyurethane-based sealants. When a top coat is applied to the plasticized polyurethane-based sealant, it minimally bleeds through to the top coat.
<b>SANFLEX GPA-3000</b>	Polyester (Liquid)	
<b>SANFLEX LBU-25</b>	Modified polyester (Liquid)	
<b>EB-200</b>	Polyethyleneglycol-dibenzoate (Liquid)	

## Appendix

### 1. Typical Properties of NAROACTY CL Products

Product Name	Appearance (20 ± 5°C)	HLB	Cloud Point °C
<b>NAROACTY CL-20</b>	Colorless to pale yellow liquid	5.7	3.8
<b>NAROACTY CL-40</b>		8.9	7.1
<b>NAROACTY CL-50</b>		10.0	8.7
<b>NAROACTY CL-70</b>		11.7	11.2
<b>NAROACTY CL-85</b>		12.6	41
<b>NAROACTY CL-95</b>		13.1	54
<b>NAROACTY CL-100</b>		13.3	64
<b>NAROACTY CL-120</b>	Colorless to pale yellow paste	14.1	80
<b>NAROACTY CL-140</b>	White to pale yellow solid	14.7	93
<b>NAROACTY CL-160</b>		15.2	99
<b>NAROACTY CL-200</b>		16.0	> 100
<b>NAROACTY CL-400</b>		17.8	> 100

### 2. Typical Properties of SANWAX Products

Product Name	Appearance (20 ± 5°C)	Color (APHA/molten)	Viscosity mPa·s (140°C)	Softening Point* <sup>2</sup> °C	Penetration Hardness* <sup>3</sup> (100g/5s/25°C)	Acid Value	Density* <sup>4</sup> (20°C)	Average Molecular Weight* <sup>5</sup>
<b>SANWAX 171-P</b>	White powder	30	180	107	4.5	Nil	0.93	1,500
<b>SANWAX 151-P</b>		30	300	107	4	Nil	0.93	2,000
<b>SANWAX 131-P</b>		30	1,000	108	3.5	Nil	0.93	3,500
<b>SANWAX 161-P</b>		30	4,200	111	2	Nil	0.93	5,000
<b>SANWAX LEL-250</b>	Pale yellow pellet	50	600	124	< 1	Nil	0.95	3,000
<b>SANWAX E-250P</b>	Pale yellow powder	6* <sup>1</sup>	320	106	5	16.5	0.94	2,000* <sup>6</sup>
<b>SANWAX E-310</b>	Pale yellow pellet	100	300	100	5	15	0.93	2,000
<b>SANWAX E-330</b>		100	850	104	4	17	0.94	2,000

\*1 Gardner

\*2 ASTM E 28-58T

\*3 ASTM D 1321-61T

\*4 ASTM D 792-60T

\*5 Vapor pressure osmometry

\*6 Gel permeation chromatography

### 3. Typical Properties of VISCOL Products

Product Name	Appearance (20 ± 5°C)	Color (APHA/molten)	Viscosity mPa·s (160°C)	Softening Point* <sup>2</sup> °C	Penetration Hardness* <sup>3</sup> (100g/5s/25°C)	Density* <sup>4</sup> (20°C)	Average Molecular Weight* <sup>5</sup>
<b>VISCOL 660-P</b>	White powder	1* <sup>1</sup>	70	145	1.5	0.89	3,000
<b>VISCOL 550-P</b>		200	200	152	< 1	0.89	4,000
<b>VISCOL 440-P</b>		200	1,800	157	< 1	0.89	9,000* <sup>6</sup>
<b>VISCOL 330-P</b>		200	4,000	153	< 1	0.89	15,000* <sup>6</sup>

\*1 Gardner

\*2 ASTM E 28-58T

\*3 ASTM D 1321-61T

\*4 ASTM D 792-60T

\*5 Vapor pressure osmometry

\*6 Gel permeation chromatography

### 4. Typical Properties of NEWPOL BP Products

Product Name	Appearance (20 ± 5°C)	Color (APHA)	Acid Value	Hydroxyl Value	Viscosity mPa·s (60°C)
<b>NEWPOL BP-2P</b>	Pale yellow liquid	40	0.50	322	1,600
<b>NEWPOL BP-23P</b>		20	0.02	315	1,230
<b>NEWPOL BP-3P</b>		20	0.02	280	628
<b>NEWPOL BP-5P</b>	Colorless liquid	10	0.02	211	200

## 5. Typical Properties of NEWPOL BPE Products

Product Name	Appearance (20 ± 5°C)	Color (APHA)	Acid Value	Hydroxyl Value	Viscosity mPa·s (60°C)
<b>NEWPOL BPE-20T</b>	White granule	10 (molten)	0.01	349	–
<b>NEWPOL BPE-40</b>	Pale yellow liquid	20	0.02	276	278
<b>NEWPOL BPE-60</b>	Colorless to pale yellow liquid	10	0.02	228	174
<b>NEWPOL BPE-100</b>		10	0.02	167	120
<b>NEWPOL BPE-180</b>		10	0.02	110	115

## 6. Typical Properties of UMEX Products

Product Name	Appearance (20 ± 5°C)	Specific Gravity (ASTM D 792)	Melt Viscosity mPa·s (160°C)	Softening Point °C (JIS K 2531)	Acid Value (JIS K 0070)
<b>UMEX 1001</b>	Yellow granule	0.95	15,000	153	26
<b>UMEX 1010</b>	Yellow granule	0.95	6,000	145	54
<b>UMEX 100TS</b>	Pale yellow powder	0.89	120	148	3.5
<b>UMEX 110TS</b>	Pale yellow powder	0.89	132	145	7

## 7. Typical Properties of PELESTAT Products

Product Name	Appearance (20 ± 5°C)	Melting Point °C	Reduced Viscosity* <sup>1</sup>	Refractive Index	Surface Resistivity* <sup>2</sup> Ω
<b>PELESTAT NC6321</b>	Pale yellow pellet	202	1.7	1.51	1 × 10 <sup>9</sup>
<b>PELESTAT NC7530</b>		177	1.3	1.53	2 × 10 <sup>9</sup>
<b>PELESTAT 230</b>		161	–	1.50	5 × 10 <sup>7</sup>
<b>PELESTAT 300</b>		135	–	1.49	1 × 10 <sup>8</sup>
<b>PELESTAT VH230</b>		162	–	–	5 × 10 <sup>7</sup>
<b>PELESTAT HC6800</b>		199	1.7	1.51	3 × 10 <sup>7</sup>

\*1 0.5 wt % formic acid solution at 25°C \*2 The resistivity of PELESTAT itself. Measured at 23°C under 50% R.H. (ASTM D 257)

## 8. Typical Properties of SANPRENE IB Products

Product Name	Appearance (20 ± 5°C)	Viscosity mPa·s (20°C)	Solid Content wt %	Solvent*
<b>SANPRENE IB-422</b>	Pale yellow liquid	1,100	30	MEK / IPA
<b>SANPRENE IB-F370</b>		2,900 (25°C)	40	MPG / IPA
<b>SANPRENE IB-300</b>		14,000	42	MEK / IPA
<b>SANPRENE IB-1700D</b>		1,300	30	MEK / IPA
<b>SANPRENE IB-129</b>		5,500	40	IPA / EtAc

\* MEK : Methyl ethyl ketone IPA : Isopropanol MPG : Methyl propylene glycol EtAc : Ethyl acetate

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

Product Name	Appearance (20 ± 5°C)	Composition	HLB
<b>IONET DL-200</b>	Pale yellow liquid	Polyoxyethylene di-laurate	6.6
<b>IONET DS-300</b>	Pale yellow solid	Polyoxyethylene di-stearate	7.3
<b>IONET DS-400</b>			8.5
<b>IONET DO-600</b>	Brown liquid	Polyoxyethylene di-oleate	10.4
<b>IONET DO-1000</b>	Pale yellow solid		12.9
<b>IONET MS-400</b>	Pale yellow solid	Polyoxyethylene mono-stearate	11.9
<b>IONET MS-1000</b>			15.7
<b>IONET MO-200</b>	Pale straw-colored liquid	Polyoxyethylene mono-oleate	8.4
<b>IONET MO-400</b>	Straw-colored liquid		11.8
<b>IONET MO-600</b>			13.7

# PRODUCT LIST

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

1. Emulsifiers for Emulsion Polymerization
2. Pigment Dispersants (Oligomer Type)
3. Resin Modifiers
4. Antistatic Agents
5. Mold Releasing Agents
6. Printing Ink Binders
7. Compounding Ingredients for Paints and Printing Inks
8. Pigment Dispersants (Surfactant Type)
9. Defoaming Agents
10. Plasticizers for Polyurethane-Based Sealants

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

### Performance Chemicals for Cosmetics

1. Base Materials for Shampoos (Anionic Type)
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
8. Gelling Agents 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 Agrichemicals

1. Dispersants for Agrichemical Granule Preparations

### Performance Chemicals for Detergents

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

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

1. Polyether Polyols for Flexible Slabstock Polyurethane Foams
2. Polyether Polyols for Automobile Hot Molded Seat Cushions
3. Polyether Polyols for Automobile High-Resilient Molded Seat Cushions
4. Polyether Polyols for Crushpad Foams
5. Polyether Polyols for Rigid Polyurethane Foams
6. Multi Functional Polyols
7. Example of Polyurethane Foam System
8. Polyether Polyols for CASE
9. Prepolymers and Raw Materials for Polyurethane Elastomers
10. Base Materials for Synthetic Leathers
11. Water-Borne Polyurethanes for Textile Processing
12. Polyurethane Emulsions for Coatings

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

1. Lubricant 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

## 5 PERFORMANCE CHEMICALS FOR RESOURCE EXTRACTION AND MINING INDUSTRIES

1. Polymer Flocculants
2. Dewatering Accelerator
3. Cold Flow Improvers
4. Lubricity Improver
5. Dewaxing Aids

## 6 PERFORMANCE CHEMICALS FOR WASTEWATER TREATMENT

1. Polymer Flocculants
2. Aminoalkyl Methacrylate Monomers

## 7 PERFORMANCE CHEMICALS FOR COSMETICS SUCH AS HAIR-CARE, SKIN-CARE AND MAKE-UP

1. Foaming Agents/Detergents/Foam Improvers
2. Emulsifying Agent/Solubilizing Agent/Dispersing Agent
3. Conditioning Agents/Styling Agents
4. Thickeners/Gelling Agents/Film-Forming Agents
5. Moisturizing Agents/Moistening Agents
6. Antibacterial/Anticeptic

## 8 PERFORMANCE CHEMICALS FOR CONSTRUCTION AND PUBLIC WORKS

1. Flooring Materials
2. Polyurethane for Architectural Paints
3. Water Sealants
4. Waterproofing Agents
5. Concrete Admixtures
6. Dispersant for Manufacturing Cement Boards by Extrusion Molding
7. Foaming Agent for Foam Concrete
8. Agents for Drilling Mud
9. Waste Mud Solidification
10. Polymer Flocculants for Gravel Washing Wastewater Treatment
11. Binder for Ceramics

## 9 ADHESIVES AND ADHESIVE-RELATED PRODUCTS

1. Pressure-Sensitive Adhesives (Cohesive Agents)
2. Potting Resins for Artificial Kidneys (Hollow-Fiber Type)
3. Resins for Anti-Corrosion Paints for Automobiles  
(for Improving Adhesion of Paints to Electrodeposition Steel)
4. Binders for Fiber-Finishing Agents
5. Binders for Fiberglass
6. Curing Agents for Epoxy Resins

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