

Conductive Polymer ink SEPLEGYDA[®]

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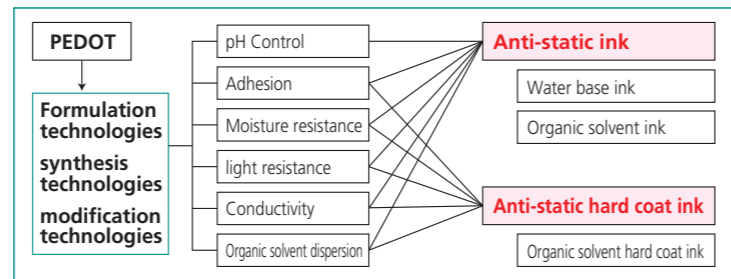
Advanced technologies for best stable anti-static coating on various substrates.

“SEPLEGYDA®” is the conductive polymer ink that formulated for each applications using high transparent polythiophene-base conductive polymer (PEDOT-PSS). There are many formulations depending on resistivity, from low resistance(100Ω/sq.~) to high resistance of anti-static area(~10¹¹Ω/sq.). There are also hard coat type available. With wide range of surface resistance value and various coating function, SEPLEGYDA® can support wide range of applications such as Optical films and Conductive tray.



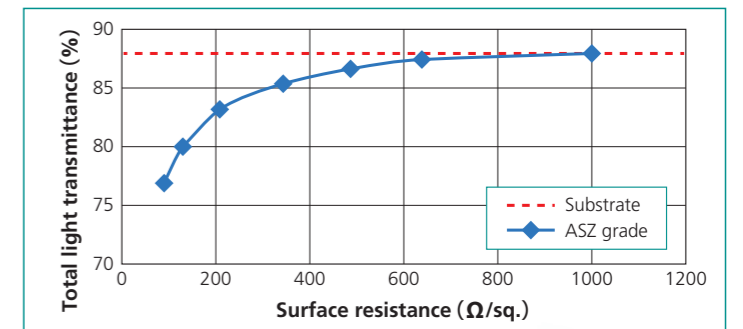
Subdivided antistatic grades

Taking advantage of the formulation, synthesis and modification technologies we have cultivated over many years, we can customize for your purpose. You can select grades for the substrate and adjust solvent resistance, wettability, quick-drying, adhesion, etc.



High conductivity /high transparency

The surface resistance can be adjusted below 100Ω/sq. The refractive index of PEDOT-PSS is lower than ITO, so you can keep the reflectance down. It can be applied to various substrates, such as glass, metal, resin, and film. We can adjust to the hardness, thickness, contact angle, color tone, etc. for your purpose. It is excellent in cost benefits to express conductivity in the wet process.



Dispersed in organic solvent / Mixable into resin

PEDOT-PSS is normally dispersed in water, but we have achieved dispersion in organic solvents using our original technology. Dispersible solvents include IPA (isopropanol) and MEK (methyl ethyl ketone), and it is possible to select a solvent that suits the application. By mixing with general-purpose resins such as silicone and hard coat, it is possible to form a single functional layer including antistatic layer.

■ SEPLEGYDA® AS-H05B : Coating layer property (TORAY Lumirror T60, #188)

AS-H05B (g)	MEK (g)	PGM (g)	DPHA (g)	Irg 184 (g)	Surface resistance ^{1,2} (Ω/sq.)
64.16	0	15	20	0.84	3×10 ⁶
59.16	5	15	20	0.84	2×10 ⁷
54.16	10	15	20	0.84	8×10 ⁷
49.16	15	15	20	0.84	2×10 ⁸
44.16	20	15	20	0.84	4×10 ⁸
39.16	25	15	20	0.84	2×10 ⁹
34.16	30	15	20	0.84	9×10 ⁹
29.16	35	15	20	0.84	3×10 ¹¹

* 1 Hiresta-UX manufactured by Nittoseiko Analytech Co., Ltd. Measurement voltage 10V, 10sec.
* 2 Bar coater #8 100°C/1min, 400mJ/cm²

Hard coat

We can add hard coat properties to antistatic paints. There are many formulations depending on resistivity, from 10⁵Ω/sq. to 10⁹Ω/sq. The coating film is highly stable over time and has excellent durability against high temperatures and high humidity. Dry film thickness is available 1 μm or more, and thin film functional layers can be formed.

■ SEPLEGYDA® HC-AX07 : Coating layer property (TORAY Lumirror T60, #188)

Wet film thickness (μm)	5	12
Dry film thickness (μm)	1	2
Surface resistance (Ω/sq.) ^{*1}	Condition 1 ^{*2}	4×10 ⁶
	Condition 2 ^{*3}	5×10 ⁵
Steel wool resistant (1kg/cm ² 10times)	Several scratches	No scratches
Total light transmittance (%. Substrate : 87.5%, JIS K7361)	88.4	87.7
Haze (%. Substrate : 3.3%, JIS K7136)	3.1	3.2
Pencil hardness (on glass, JIS K5600)	H	3H

* 1 Hiresta-UX manufactured by Nittoseiko Analytech Co., Ltd. Measurement voltage 10V, 10sec.
* 2 100°C/1min, 400mJ/cm²
* 3 100°C/10min, 400mJ/cm²

Powder (Development product)

We turn Low solid component conductive polymer dispersion into powder with our synthesis and modification technologies. It can be used for high solid content slurry and powder mixed applications.



Characteristic of each grade

Usage	Grade	Drying	Surface resistance (Ω/sq.)	Substrate	Characteristic
Anti-static ink	AS-D	Heat	10 ⁶ ~	PC, PET, PMMA, PS, PP, PE	Solvent resistance, Excellent adhesion, Excellent scratch resistance, Strong to dilution
	AS-H	Heat	10 ⁶ ~	PET, PS	Quick-drying, Moldable after coating, Strong to dilution
	AS-M	Heat	10 ⁷ ~	Glass	Excellent adhesion to glass, High hardness, Solvent resistance
	AS-Q	Heat	10 ³ ~	PET, PS	Strong to dilution
	AS-S	Heat	10 ⁶ ~	PC, PET, PMMA, PS	Excellent adhesion, Water resistance, Alcohol resistance, Spray type
Organic solvent dispersion	SAS-P	Heat	-	-	IPA dispersion
	SAS-M	Heat	-	-	MEK dispersion (Development product)
Hard coat ink	HC-A	Heat+UV	10 ⁸ ~	PET, TAC	Hard coat
Low resistance ink	ASZ-A	Heat	200 ~	Glass, Metal	High hardness, Solvent resistance, Excellent adhesion to glass, Durability
	ASZ-C	Heat	50 ~	PC, PET, PMMA, PS, Glass	Excellent adhesion, Flexibility, Long shelf life, Durability, Excellent light resistance
Powder (Development product)	OCK	-	Electric conductivity 0.1 ~ 10S/cm	-	Conductive material, Conductive assistant