GOO CHEMICAL CO., LTD.

Water soluble Polyester co-polymer

PLAS COAT series

Regarding PLAS COAT

PLAS COAT is the aqueous Polyester resin that is made from our company's unique technology without using the surface-active agent such as surfactant and disperse agent.

This resin is the saturated co-polymer of Terephthalic acid base. Since we can polymerize hard segment, soft segment and water soluble monomer at our will, we can obtain different types of resins, from hard to soft one, form water soluble to water insoluble one, or wax type one, as per customer's requirement.

PLAS COAT can be applied to the process of textile, film, paper, paint, ink, metal among others. We can develop all kind of trial products by our original molecular design in order to fill the new demands.

Characteristic of PLAS COAT

1. PLAS COAT has **superior adhesive** with various kind of materials, particularly with the resin materials (Polyester, Vinyl chloride, Polycarbonate) and the metallic materials (Aluminum, Copper etc).

2. PLAS COAT has **superior weather resistance**, since it does not contain double bond in its saturated polyester resin.

3. PLAS COAT forms **transparent film** after drying.

4. PLAS COAT has Hydroxyl Group or Carboxyl Group in the end of its molecule, so that when it is reacted with the hardener of water soluble type and dispersing type, it obtains **more hardness, more endurance and superior heat-resistance.**

5. PLAS COAT has **superior non-flammability,** due to its self-extinction characteristic, which can not be seen at Acrylic resin or Vinyl acetate.

PLAS COAT Product Catalogue

1. Properties of solution

➢ Non solvent grade （－SO_3Na ）

Brand	Appearance	Solid amount (weight %)	Viscosity (mPa·s/20℃)	pH	Ionic nature	Solvent
Z－221	Light yellow	20	5	4.5－6.5	Anion	None
Z－446	Light yellow	25	25	5－7	Anion	None
Z－561	Light blue-white	25	15	5－7	Anion	None

➢ Water－based solvent grade （－SO_3Na, Non－flammable ）

Brand	Appearance	Solid amount (weight %)	Viscosity (mPa·s/20℃)	pH	Ionic nature	Solvent
Z－565	Light blue-white	25	15	6－8	Anion	ETB : 4.5%
Z－880	Light yellowish-white	25	50	5.5－7.5	Anion	ETB : 10%
Z－3310	Light blue-white	25	300	5－7	Anion	ETB : 10%
RZ－105	Light blue-white	25	70	5－7	Anion	ETB : 10%
RZ－570	Light blue-white	25	50	5－7	Anion	ETB : 10%

ETB : Ethylene glycol mono-t-buthylether

➢ High acid value grade （－COOH ）

Brand	Appearance	Solid amount (weight %)	Viscosity (mPa·s/20℃)	pH	Ionic nature	Solvent
Z－730	Light blue-white	25	10	6.5－8.5	Anion	IPA : 0－0.9%
Z－760	Light blue-white	25	10	6.5－8.5	Anion	ETB : 5%

ETB : Ethylene glycol mono-t-buthylether
IPA : 2-Propanol

➢ PEN grade （ Naphthalene included ）

Brand	Appearance	Solid amount (weight %)	Viscosity (mPa·s/20℃)	pH	Ionic nature	Solvent
Z－592	Light blue-white	25	40	5.5－7.5	Anion	ETB : 10%
Z－687	Light blue-white	25	80	5－7	Anion	None
Z－690	Light blue-white	25	20	5.5－7.5	Anion	ETB : 10%

ETB : Ethylene glycol mono-t-buthylether

2. Properties of resin (1)

➢ Non solvent grade （－SO_3Na ）

Brand	Pencil hardness	Tg (℃)	Softening point (℃)	Acid value (mgKOH/g)	Refractive index	Water contact angle (°)
Z－221	2H	47	135－140	＜5	1.56	40
Z－446	2H	47	115－125	＜5	1.56	50
Z－561	5H	64	170－175	＜5	1.57	55

➢ Water－based solvent grade （－SO_3Na, Non－flammable ）

Brand	Pencil hardness	Tg (℃)	Softening point (℃)	Acid value (mgKOH/g)	Refractive index	Water contact angle (°)
Z－565	5H	64	170－175	＜5	1.57	64
Z－880	B	20	85－95	＜5	1.54	73
Z－3310	6B	－20	70－80	＜5	1.53	58
RZ－105	2H	52	130－135	＜5	1.56	58
RZ－570	4H	60	160－170	＜5	1.57	64

➢ High acid value grade （－COOH ）

Brand	Pencil hardness	Tg (℃)	Softening point (℃)	Acid value (mgKOH/g)	Refractive index	Water contact angle (°)
Z－730	H	46	80－85	40－60	1.55	65
Z－760	2H	52	90－105	40－55	1.56	65

➢ PEN grade （ Naphthalene included ）

Brand	Pencil hardness	Tg (℃)	Softening point (℃)	Acid value (mgKOH/g)	Refractive index	Water contact angle (°)
Z－592	HB	40	140－160	＜5	1.59	67
Z－687	4H	110	185－200	＜5	1.61	60
Z－690	4H	110	185－205	＜5	1.62	63

＊ Refractive index measurement ： Prism coupler method

＊ Water contact angle measurement ： Equilibrium contact angle, Using of ion-exchange water

3. Properties of resin (2)

Brand	Molecular weight	Water resistance		Solvent resistance				
		Water	Boiling water	Toluene	MEK	Ethyl acetate	Ethyl alcohol	Hexane
Z-221	14,000	×	×	○	○	○	○	○
Z-446	16,000	△	×	○	△	△	○	○
Z-561	27,000	△	×	○	○	○	○	○
Z-565	25,000	○	△	○	△	△	○	○
Z-880	15,000	○	△	×	×	×	○	○
Z-3310	15,000	○	△	×	×	×	○	○
RZ-105	16,000	○	×	△	△	△	○	○
RZ-570	23,000	○	△	△	△	△	○	○
Z-730	3,000	○	×	×	×	×	△	○
Z-760	3,000	○	△	×	×	×	○	○
Z-592	26,000	○	△	×	×	×	○	○
Z-687	26,000	○	△	○	○	○	○	○
Z-690	28,000	○	△	△	△	△	○	○

【 Water resistance 】

Conditions of making film : Coating on PET film and Heating at 100℃×10 minutes.

＊ Z-687, Z-690 : Film-forming agent was used.
Heating at 130℃×10 minutes.

Evaluation : Water ; Observing changes in its appearance after the film was sunk below the surface of water (25 degree) during 24 hours.

Boiling Water ; Observing changes in its appearance after the film was sunk below the surface of Boiling Water during 30 minutes.

○ Unchanged , △ Changed to white tint , × Dissolved

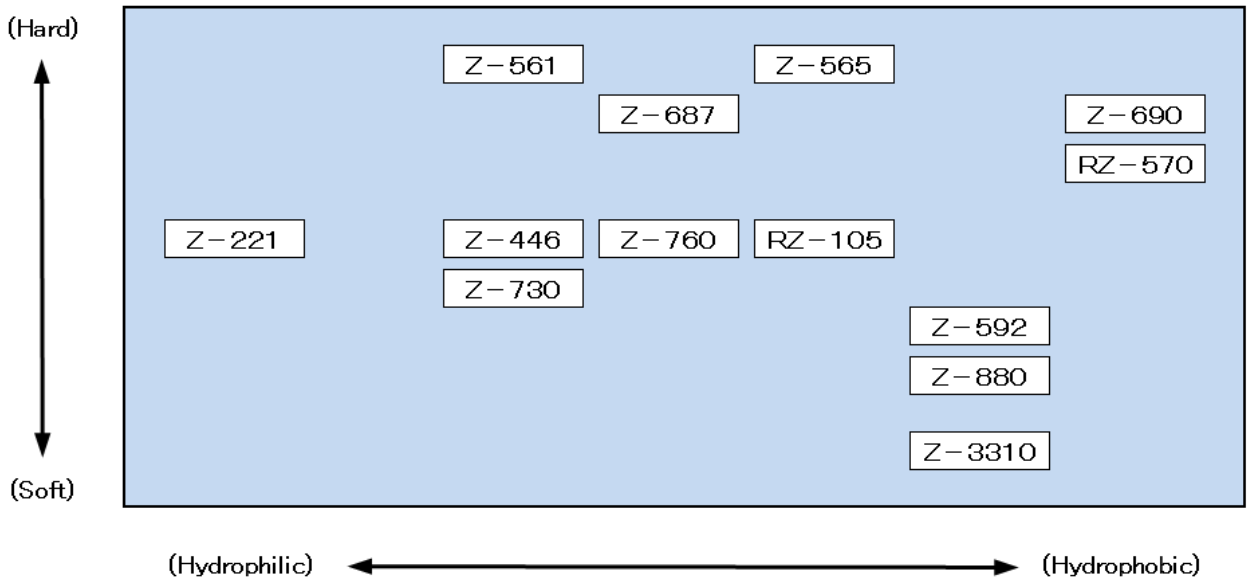
【 Solvent resistance 】

Conditions of making film : Coating on PET film and Heating at 100℃×10 minutes

Rubbing test : Observing changes in its appearance after rubbing on the film with an absorbent cotton containing each Solvent.

○ Unchanged, △ Changed to white tint , × Dissolved

Product chart



Application

Textile

PLAS COAT is used at adjustment of the touch feeling, filling process when getting Flame-proof property on textiles, making use of its nonflammable, adhesive, and hardness characteristics.

Film

Used for changing property of the film by coating on the surface of the PET film.

PLAS COAT has an improving effect for printing by coating few micron hydrophilic polymer on the surface of film.

Soil release

Polyester fiber is easy of soiling and electrification because it is heavy hydrophobic and non absorbent. PLAS COAT FR series is used for preventing soiling and electrification by adding water intimateness to the fiber.

Notice

- This catalogue shows our products for industrial use, intended to be sold to manufacturers and business companies.
- The results mentioned on this catalogue are information, not warranted.
- It is necessary to confirm by previous test, if it will have required effect and performance for the aim and condition, before the use.

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