Biobased Aqueous Polyester Resins

Developed product

GX-1587 • GX-1482 • GX-1484 • GX-1490

- Constituents of the resins are partially replaced from petroleum-based to biomass-based.
- ※ **Biobased synthetic polymer content: 45～72% (ISO 16620-3 compliant)**
- Environmentally friendly, **low VOC**.
- Excellent adhesion to PET film.
- Available for in-line / off-line coating.
- Formulated only with raw materials listed in **FDA and Japan's Positive List System for Food Utensils, Containers, and Packaging**.
- Application: various water-based ink binders, adhesives, bonding agents, and backing materials.

General properties	GX-1587	GX-1482	GX-1484	GX-1490
Biobased carbon content※	40%	42%	40%	71%
Biobased synthetic polymer content※	45%	45%	45%	72%
Solid content	25%	25%	25%	22%
Solvent	Water: 65% ETB※: 10%	Water: 75%	Water: 75%	Water: 66% ETB※: 12%
Appearance	Light blue-white liquid	Light blue-white liquid	Light blue-white liquid	Light blue-white liquid
Viscosity (mPa•s/20℃)	20	10	10	15
pH (10% aq)	5.0～7.0	4.0～7.0	6.5～9.5	4.5～7.5
Tg	45℃	42℃	48℃	-26℃
Acid value (mgKOH/g)	<10	<10	60～100	<10
Food-related Regulations※	§175.105 Japan's Positive List System	§175.105 Japan's Positive List System	§175.105 §175.300 Japan's Positive List System	§175.105 Japan's Positive List System
Feature	Water-resistance	Non solvent	Non solvent High acid value	High biomass Low Tg

※Biobased carbon content: amount of biobased carbon in the product, ASTM D6866-22 compliant
※Biobased synthetic polymer content: amount of biobased synthetic polymer present in the product, ISO16620-3 compliant
※ETB: Ethylene glycol mono-tert-butyl ether (CAS No.: 7580-85-0)
※Formulated only with raw materials listed in FDA and Japan's Positive List System for Food Utensils, Containers, and Packaging.

Coating properties		GX-1587	GX-1482	GX-1484	GX-1490
Water resistance (25℃)		○	○	△ (○※)	○
Hot water resistance (80℃)		△	×	△ (○※)	△
Solvent resistance	Ethanol	○	○	△ (○※)	△
	Isopropyl alcohol	○	○	△ (○※)	×
	Hexane	○	○	○ (○※)	○
	Toluene	△	○	△ (○※)	×
	Ethyl acetate	△	△	× (○※)	×
	Methyl ethyl ketone	△	△	× (○※)	×

Results ○: No change △: Whitening ×: Dissolution

※Using aqueous cross-linking agent (oxazoline type.)

- Coating condition (base material: PET film): drying condition 120℃×5min, dry thickness about 3μm.
- Water resistance: Appearance change in 24 hours of immersion in water at 25℃.
- Hot water resistance: Appearance change in 30minutes of immersion in hot water at 80℃.
- Solvent resistance: Appearance change after rubbing (5 round trips) with a cotton swab, soaked in solvents.