Biodegradable Aqueous Polyester Resins

GX-1547

- Water-based polyester resin composed only of good degradable raw materials and showing good biodegradability.
- Environmentally friendly, **low-VOC waterborne coating**.
- Formulated only with raw materials listed in **FDA** and **Japan's Positive List System for Food Utensils, Containers, and Packaging**.
- Solid resin is well soluble in ethyl acetate and methyl ethyl ketone, enabling solvent-based applications.
- **Resin that can be used in either water-based or solvent-based systems**.
- Applications: thermal paper, paper processing, fertilizer coatings, plasticizers, modifiers, primers, resin binders, etc.

General Properties

	GX-1547
Food-related Regulations※	FDA§175.105, 175.300 Japan's Positive List System
Solid content	25%
Solvent	Water: 75%
Appearance	Light blue-white liquid
Viscosity (mPa·s/20℃)	5
pH (10% aq)	6.0 ～ 9.0
Tg	60℃
Acid value (mgKOH/g)	50 ～ 80
Solvent solubility ·Solid content: 50% ·Dissolving temperature: 25℃	Ethyl acetate — ○
	Methyl ethyl ketone — ○

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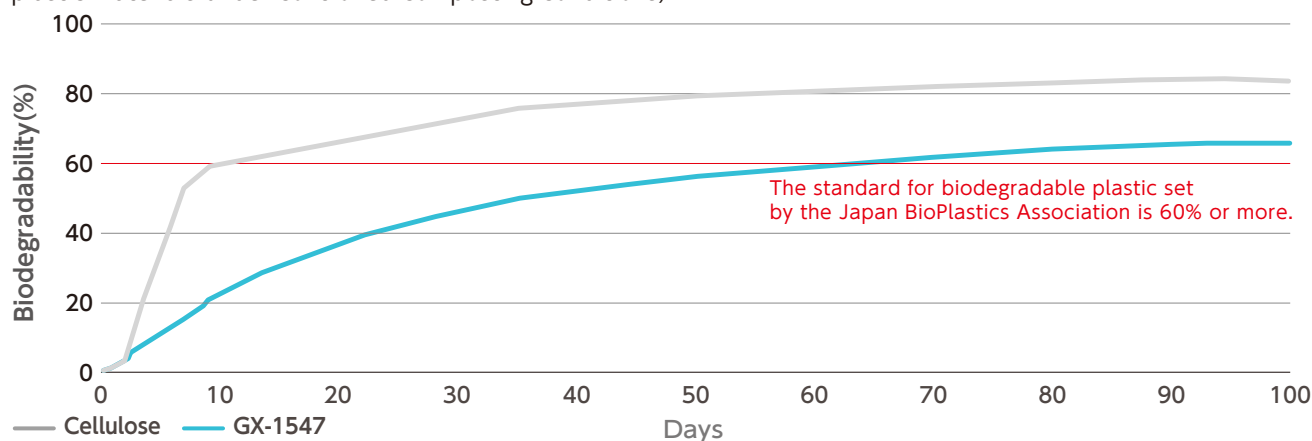
Coating properties

		GX-1547
Water resistance (25℃)		△
Hot water resistance (80℃)		△
Solvent resistance	Ethanol	△
	Isopropyl alcohol	△
	Hexane	○
	Toluene	△
	Ethyl acetate	×
	Methyl ethyl ketone	×

Results ○: No change　△: Whitening　×: Dissolution

- 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 30 minutes of immersion in hot water at 80℃.
- Solvent resistance: Appearance change after rubbing (5 round trips) with a cotton swab, soaked in solvents.

Biodegradability evaluation

(JIS K6953-2 (ISO 14855-2), Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions)

The standard for biodegradable plastic set by the Japan BioPlastics Association is 60% or more.

— Cellulose　— GX-1547

Days

※ Temperature: 58±2℃, Equipment: MODA-CS