

BG4400 - TECHNICAL DATA SHEET

Revision date: November 05, 2020

Version & language 1/AP006 - EN

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PRODUCT DESCRIPTION

BG4400 is a biodegradable Compound, composed primarily from PLA- Biodegradable resin with 85% of product formulation. After crystallization, BG4400 has excellent heat resistance.

APPLICATION

With high MI BG4400 is designed for injection molding processing. BG4400 can be processed on conventional injection molding machine. The material is stable in the molten state, provided that proper drying procedures are followed.

Main application: knives, forks, spoons, cup, box, tray, baby toys ...

STRENGTH OF ANBIO BG4400

- ① BG4400 is printable, weldable and can be mechanically recycled
- ② When incinerated, BG4400 does not generate any noxious side-products and hazardous gases.
- ③ BG4400 is competitively priced
- ④ With high MI, BG4400 is easy to make an injection on conventional machine
- ⑤ We can supply to a customer grade that satisfies the individual customer's need
- ⑥ BG4400 has excellent heat resistance
- ⑦ BG4400 has short injection molding cycle times and, by consequence, low production costs.

PROCESSING INFORMATION

In-line drying is recommended for BG4400 resins. A moisture content of less than 0.25% (25 ppm) is recommended to prevent viscosity degradation. Polymer is supplied in foil lined boxes or bags dried to <0.25% when packaged. The resin should not be exposed to atmospheric conditions after drying. Keep the package sealed until ready to use and promptly dry and reseal any unused material. The drying curves for both amorphous and crystalline resins are shown to the right. It is important to consider accurate initial moisture, when calculating necessary drying time.

Nucleating agents used in BG4400 have a function in accelerating the crystallization rate, decreasing the spherulite size and transforming the crystal form. So mechanical properties like flexural modulus, strength, heat distortion temperature and hardness of BG4400 will increase after crystallization process. BG4400 be crystallized at 80-100°C within 20-40s.

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Guide for Injection

Item	Location	Unit	Value	Remarks
Drying temp.	-	°C	<70	
Drying time	-	hrs	5~8	
Cylinder temp.	Rear	°C	165	
	Middle	°C	170~180	
	Front	°C	180~195	
Nozzle temp.	-	°C	205	
Crystallization (Mold temperature)	-	°C	85-100	Mold temperature
Crystallization (Mold-time)	-	s	20-40	Crystallization time

AVERAGE PHYSICAL AND MECHANICAL PROPERTIES

Item	Conditions	Method	Unit	Value
Density	g/ml	ASTM D792	-	1,38
MFI	190°C/2.16kg	ASTM D1238	g/10min	5~12
HDT	-	ASTM D648	°C	100~120
Tensile Yield Strength	-	ASTM D638	kgf/cm2	300~400
Tensile Elongation	-	ASTM D638	%	<20

FOOD PACKAGING STATUS

US status: On 2020 August 07, BG4400 is passed US FDA CFR 175.300 (Resinous and Polymeric Coatings) – Determination of Amount of Extractives

SGS Test report No: VNHL2004006038HG

Extractants	Test Condition	Result (mg/inch ²)	Reporting Limit (mg/inch ²)	Permissible Limit (mg/inch ²)
		1		
Distilled Water	150°F for 2 hours	ND	0.1	0.5
8% Alcohol	150°F for 2 hours	ND	0.1	0.5
n-Heptane	100°F for 30 minutes	ND	0.1	0.5
Comment	--	PASS	--	--

BG4400 is safely used as the food-contact surface of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food

Figure 1: US FDA CFR 175.300



European Status: On 2020 August 07 , BG4400 is passed Eu food contact standard:

Commission Regulation (EU) No 10/2011

- a) Plastic- Overall Migration
- b) Plastic- Specific Migration of Heacy Metals

And European Regulation (EC) No. 1907/2006 (REACH) Annex XVII and its amendments:

Polycyclic Aromatic Hydrocarbons (PAHs) content

European Directive 94/62/EC (Pb, Cd, Hg, Cr VI)

Test report No: VNHL2004006032HG

No SML's for the above referenced grade exist in Plastics Regulation 10/2011 as amended. Anbio would like to draw your attention to the fact that the EU- Plastics Regulation 10/2011, which applies to all EU-Member States, includes a limit of 10 mg/dm² of the overall migration from finished plastic articles into food. In accordance with Plastics Regulation 10/2011 the migration should be measured on finished articles placed into contact with the foodstuff or appropriate food simulants for a period and at a temperature which are chosen by reference to the contact conditions in actual use, according to the rules laid down in Plastics Regulation 10/2011.

COMPOSTIBILITY STATUS:

BG4400 is fulfils the requirements of the European standard DIN EN 13432, the US standard ASTM D 6400 for compostable and biodegradable polymers, because it can be degraded by micro-organisms. The biodegradation process in soil depends on the specific environment (climate, soil quality, population of micro-organisms)

BULK STORAGE RECOMMENDATIONS

The resin silos recommended and used by Anbio are designed to maintain dry air in the silo and to be isolated from the outside air. This design would be in contrast to an open, vented to atmosphere system that we understand to be a typical polystyrene resin silo. Key features that are added to a typical (example: polystyrene) resin silo to achieve this objective include a cyclone and rotary valve loading system and pressure vessel relief valves. The dry air put to the system is sized to the resin flow rate out of the silo. Not too much dry air would be needed and there may be excess instrument air (-30°F dew point) available in the plant to meet the needs for dry air. Our estimate is 10 scfm for a 20,000 lb/hr rate resin usage. Typically, resin manufacturers specify aluminum or stainless steel silos for their own use and avoid epoxy-lined steel.