ENTEC

BioLogiQ | PRODUCT GUIDE

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NuPlastiQ, from BioLogiQ, is an amorphous polymer made from 100% USDA certified biobased content. It is derived from plant-based carbohydrates, along with small amounts of naturally sourced glycerin. The NuPlastiQ is then blended with traditional polymers such as LLDPE, HDPE, PP, PS and HIPS as well as other bioplastics like PLA, PHA and PBAT. This results in a new family of products called BioBlend®. These BioBlend® products offer enhanced functional and environmental performance. BioBlend® XD are high performance products used in polyolefin blends, primarily for use in film packaging applications while BioBlend® XP products are used in blends with engineering resins such as PS, PC, ABS and TPEs for producing durable goods. BioBlend® XD and XP are essentially masterbatch products that are then added to your current polymer at levels from 5% to 40%. Depending on the loading level of BioBlend®, you may need to make slight adjustments to your processing conditions, otherwise they typically run at your current process settings.

General Advantages of NuPlastiQ

BioLogiQ®

POWERED BY PLANTS WITH THE MISSION OF REDUCING PLASTIC POLLUTION

- They start with 100% natural, renewable resourced, NuPlastiQ GP Biopolymer and reduce the use of fossil fuel-based materials.
- They reduce greenhouse gas emissions.
- NuPlastiQ XP resins enhance the strength and maintain the recyclability of polyethylene or polypropylene components.
- NuPlastiQ XD resins are durable and stable.

PROCESSING, HANDLING & USE GUIDELINES

NuPlastiQ BioPolymer and BioBlend® Resin are shipped in sealed moisture proof bags and are ready to use as supplied. If the material is exposed to a humid environment, they will absorb moisture. If needed, BioBlend® pellets can be dried at 140°F (104°F for NuPlastiQ) for 1 to 4 hours to a moisture content of 0.5% or less. BioBlend® can be processed on existing equipment and typically may only require slight adjustments to current processing conditions. Under normal processing conditions BioBlend® may generate a slight odor and/or smoke. BioBlend® are masterbatch concentrates and are typically added to the production resin at levels between 10% and 40% let down.

Common processing methods used to convert BioBlend® includes blown and cast film, blow molding, injection molding, extrusion and thermoforming.

Typical Film Applications for BioBlend® Resins includes:

- Form Fill Seal Films
- Lamination Films
- Stand Up Pouches
- Shrink Film
- Stretch Film
- Trash Liners
- Shopping Bags

Typical Injection & Blow Molded Applications for BioBlend® Resins includes:

- Caps & Closures
- Reusable Cups
- Disposal Cutlery
- Personal Care Bottles

Typical Extruded Applications for BioBlend® Resins includes:

- Sheet & Thin Wall Thermoformed Cups
- Food Trays & Plates

BRAND	POLYMER TYPE	GRADE	BIO-BASED	COMPOSTABLE/ BIODEGRADABLE	DENSITY g/cm³	MELT INDEX, g/10 min.	TENSILE STRENGTH at BREAK, psi	FLEX MODULUS, psi	PROCESSING METHOD
NuPlastiQ	Plant based polysaccharide	CG 1000.A1AA	✓	Biodegradable	1.40	6 (at 170°C/21.6kg)	4,350	217,500	Blown Film / Injection Molding
NuPlastiQ	Plant based polysaccharide	CG 1000.A3AA	✓	Biodegradable	1.40	4 (at 170°C/21.6kg)	4,350	217,500	Blown Film / Injection Molding
NuPlastiQ	Plant based polysaccharide	GP 2030.0115	✓	Biodegradable	1.41	9 (at 170°C/10kg)	---	---	Blown Film / Extrusion
BioBlend®	70% PBAT / 30% NuPlastiQ	BC 27132	✓	Compostable	1.3	3.8 (at 190°C/2.16kg)	2,610	25,816	Blown Film / Extrusion / Injection Molding
BioBlend®	50% PLA / 50% NuPlastiQ	BC 27255	✓	Compostable	1.32	4.9 (at 190°C/2.16kg)	2,451	430,762	Injection Molding
BioBlend®	50% PPh / 50% NuPlastiQ	XD 25050	✓	Biodegradable	1.16	2 (at 190°C/2.16kg)	4,470	210,250	Injection Molding
BioBlend®	50% PPh / 50% NuPlastiQ	XD 25150	✓	Biodegradable	1.16	5.5 (at 190°C/2.16kg)	5,100	256,650	Injection Molding
BioBlend®	50% HIPS / 50% NuPlastiQ	XD 26150	✓	Biodegradable	1.20	1.8 (at 190°C/5kg)	---	---	Injection Molding / Extrusion
BioBlend®	50% ABS / 50% NuPlastiQ	XD 26250	✓	Biodegradable	1.23	2 (at 190°C/10kg)	4,960	375,550	Injection Molding
BioBlend®	80% HDPE / 20% NuPlastiQ	XD22620	✓	Biodegradable	1.04	1 (at 190°C/5kg)	1,812	95,700	Blow Molding
BioBlend®	50% HDPE / 50% NuPlastiQ	XP 22150	✓	Biodegradable	1.17	0.3 (at 190°C/10kg)	---	---	Blown Film
BioBlend®	50% HDPE / 50% NuPlastiQ	XP 22250	✓	Biodegradable	1.20	0.9 (at 190°C/10kg)	3,625	134,850	Blown Film / Extrusion
BioBlend®	50% mLLDPE / 50% NuPlastiQ	XP 24250	✓	Biodegradable	1.16	0.65 (at 190°C/5kg)	2,420	100,050	Blown Film / Extrusion
BioBlend®	50% Butene LLDPE / 50% NuPlastiQ	XP 24550	✓	Biodegradable	1.16	0.25 (at 190°C/5kg)	2,030	89,900	Blown Film / Extrusion
BioBlend®	50% Octene LLDPE / 50% NuPlastiQ	XP 24850	✓	Biodegradable	1.16	1.45 (at 190°C/10kg)	1,305	104,400	Blown Film / Extrusion