



EcoWorks® Resin

Compostable Resin for Film



PRODUCT DESCRIPTION

EcoWorks Resin is a proprietary blend of aliphatic and aromatic polyesters designed for compostable film extrusion applications. In addition to the compostability, EcoWorks also contains Ingeo™* Biopolymer, an annually renewable resource derived from plant sugars. EcoWorks Resin provides an environmentally conscious alternative to polyethylene and polypropylene sheet materials. Formulating with EcoWorks Resin is customizable; it can be used as is or blended with other biodegradable materials and process additives to obtain desired properties.

Films produced from EcoWorks Resin are certifiable as 100% compostable per ASTM D6400 and DIN EN 13432. The exact time needed for EcoWorks products to biodegrade is dependent upon the conditions and activity of the disposal environment (temperature, soil quality, activity of microorganisms). When placed in a typical commercial composting environment, films produced from EcoWorks Resin will fully biodegrade aerobically into carbon dioxide and water within a matter of weeks. There is no ecotoxicity to the soil, plants, or microorganisms involved in this process. Films produced from EcoWorks are shelf stable and will not degrade prematurely until placed in a proper composting environment.

* Ingeo™ is a trademark of Nature Works LLC

POTENTIAL APPLICATIONS

- Garbage and Mulch Bags
- Community Composting Programs
- Grocery Bags
- T-shirt Bags
- Retail Packaging

CERTIFICATIONS AND TESTING

EcoWorks Resin is certified compostable by BPI (Biodegradable Products Institute) according to ASTM D 6400. Films produced from EcoWorks Resin can be certified compostable per ASTM D6400 and DIN EN 13432; however, all films produced from EcoWorks Resin must be independently certified.

EcoWorks Resin is composed of FDA approved ingredients.

PROCESSING CONDITIONS

EcoWorks Resin can be processed on traditional blown or cast film extrusion equipment. The feed throat should be kept as cold as possible. Zone 1 should be set to approximately 138-149°C (280-300°F). All other zones should be approximately 160-193°C (320-380°F).

EcoWorks Resin is not compatible with some traditional polyolefin resins; therefore, special purging processes should be followed:

1. Clean extruder and bring to steady state with current operating resin. Purge remaining material from system and follow with a high melt index PE or PP, depending upon prior operation.
2. Change screen pack.
3. Introduce EcoWorks Resin at the operating conditions of above resin. Purge through until all deposits forming stripes or gels are eliminated.
4. When resin has purged through, reduce temperatures to the recommended profile.
5. At shutdown, return to processing conditions for subsequent operation and purge extruder with appropriate resin.

EcoWorks Slip and Antiblock additives are available and maybe added to reduce surface friction during extrusion and subsequent converting process. Recommended dosages for slip are 0.5 - 2.5% and 1 - 10% for antiblock.



DRYING

Due to the moisture sensitivity of EcoWorks Resin, it is strongly recommended that the moisture content is measured prior to extrusion. EcoWorks should be dried to a moisture content of <0.05% (500 ppm) to avoid hydrolysis of the polymer during processing.

PACKAGING AND STORAGE

EcoWorks Resin is available in 454 kg (1000 lb) gaylords packaged in a barrier bag. Keep product stored in a cool, dry environment. Keep the package sealed until ready to use and any unused portions should be kept sealed in a barrier bag to avoid moisture contamination. EcoWorks Slip and Antiblock additives are also available supplied in 25 kg drums.

PROCESSING INFORMATION

Typical Mechanical Properties of Blown Film

Process		Test Method	Units	Typical Value
Caliper		ASTM D6988	μm (mil)	25 (1)
Breaking Factor	MD	ASTM D882-02	kg/m (lbs/in)	139 (7.78)
	TD			103 (5.74)
Tensile Strength at Break	MD	ASTM D882-02	MPa (psi)	54 (7780)
	TD			40 (5742)
Elongation at Break	MD	ASTM D882-02	%	391.65
	TD			264.89
Yield Strength	MD	ASTM D882-02	MPa	29 (4241)
	CD			22 (3136)
Tear Strength	MD	ASTM D1922-06A	mN	686.70
	CD			294.30
Dart Drop Impact Resistance		ASTM D1709-04	grams	65.52

*Typical mechanical properties represent average laboratory values and are intended as guides only, not as specifications. Film properties are typical of blown film extruded at a blowup ratio of 2.5:1, but are dependent upon operating conditions.

FOR INDUSTRIAL USE ONLY

KEEP OUT OF REACH OF CHILDREN

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT SAFETY DATA SHEET FOR MORE

INFORMATION

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