CORTEC CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

COMPOSTABLE
Biodegradable Products Institute | US COMPOSTING COUNCIL

EcoWorks®

Eco Works® Compostable Resin for Film

DESCRIPTION

Eco Works® Resin is a proprietary blend of aliphatic and aromatic polyesters designed for compostable film extrusion applications. Eco Works® Resin also contains a biopolymer sourced from annually renewable feedstocks. When placed in a typical commercial composting environment, films produced from Eco Works® Resin will fully biodegrade within a matter of months (exact time depends on conditions of the disposal environment). There is no ecotoxicity to the soil, plants, or microorganisms involved in this process. Films produced from Eco Works® are shelf stable and will not degrade prematurely until placed in a proper composting environment.

PACKAGING & STORAGE

Eco Works® 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. Any unused portions should be kept sealed in a barrier bag to avoid moisture contamination.

Eco Works® Slip and Antiblock additives are also available supplied in 25 kg drums.

POTENTIAL APPLICATIONS

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

FEATURES

- Eco Works® resin is certified by BPI (international Biodegradable Products Institute, Inc.) to be compostable in municipal and industrial composting facilities according to ASTM D6400 (BPI certificate #890974-6).
- Films produced from Eco Works® Resin can be certified compostable per ASTM D6400 and DIN EN 13432; however, all films produced from Eco Works® Resin must be independently certified.
- Eco Works® Resin is composed of FDA approved ingredients.
- Eco Works® Resin provides an environmentally conscious alternative to polyethylene and polypropylene sheet materials.
- Formulating with Eco Works® Resin is customizable; it can be used as is or blended with other biodegradable materials and process additives to obtain desired properties.

PROCESSING CONDITIONS

Eco Works® 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 280-300 °F (138-149 °C). All other zones should be approximately 320-380 °F (160-193 °C).

Eco Works® 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 Eco Works® 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.

Eco Works® Slip and Antiblock additives are available and may be added to reduce surface friction during extrusion and subsequent converting processes. Recommended dosages for slip are 0.5 - 2.5% and 1 - 10% for antiblock.

DRYING

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

PROCESSING INFORMATION

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)
	CD			103 (5.74)
Tensile Strength at Break	MD	ASTM D882-02	MPa (psi)	54 (7780)
	CD			40 (5742)
Elongation at Break	MD	ASTM D882-02	%	391.65
	CD			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.

4119 White Bear Parkway, St. Paul, MN 55110 USA
Phone (651) 429-1100, Fax (651) 429-1122
Toll Free (800) 4-CORTEC
info@cortecvci.com
https://www.cortecvci.com
https://www.cortecpackaging.com

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ISO/IEC-17025 LABORATORY TESTING ACCREDITED

ISO 9001 CERTIFIED QUALITY SYSTEM REGISTERED

ISO 14001 CERTIFIED ENVIRONMENTAL SYSTEM REGISTERED

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