Product information

Version 1.0
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Ecolene® F41X

Ecolene® is a range of biodegradable and compostable thermoplastic materials, based on renewable resources. Ecolene® is a great alternative for conventional plastics such as LDPE, with lower environmental impact.
Ecolene® resins are suitable for use in flexible film applications. Processing method is ideally blown film or cast film extrusion. Downgauging to 10µm is possible. Typical applications are garbage bags, organic waste bags, compost bags, flexible packaging, …

100%
biodegradable
compostable

Ecolene

Properties:

- Based on renewable resources
- Biodegradable according to EN13432
  - *certified "OK compost HOME"*
- Excellent processability on conventional LDPE blown film lines
- Ready to use compound
- No pre-drying required

General applications:

- Single use bags (bio-waste bags, bin liners)
- Fruit & vegetable bags
- Carrier bags
- Organic waste collection bags
- Agricultural films

Films made of Ecolene® F41X resin:

- Good mechanical properties
- Good bag manufacturing process
- Downgauging to 10µ possible
- White translucent colour
- Good sealing properties
- Printable (no pre-treatment required)
- Recyclable

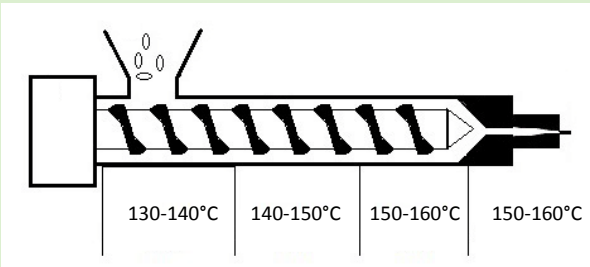
Processing information:

- *General:*
  Ecolene® F41X resin is developed for blown film extrusion.
- *Pre-drying:*
  Product can be used directly. No pre-drying required. Although Ecolene® resin can contain 0.6 - 0.7% moisture, pre-drying will negatively affect material performance and appearance.
- *Purging:*
  Before running Ecolene® resin, clean and purge the extruder with a low-melting polymer (around 120°C). Make sure all polymer with melting point >120°C has been purged out of the extruder to avoid unmelts.

Physical properties	Value	Unit	Test Method
Density	1.28 – 1.31	g/cm³	ISO 1183
MFR (160°C, 2.16kg)	0.55	g/10min	ISO 1133
Melting point	120	°C	DSC
Appearance	White to light yellowish granulates		
Moisture content	<0,7%		

Mechanical properties	Value (MD/TD)	Unit	Test Method
Tensile strength	18.8 / 11.7	MPa	ISO 527-3
Strain at Tensile strength	367 / 397	%	ISO 527-3
Stress at break	15.4 / 9.7	MPa	ISO 527-3
Strain at break	376 / 406	%	ISO 527-3
Tear resistance (Elmendorf)	TBD	mN	ASTM D 1922

Processing temperatures



Biodegradability – Compostability:

- Ecolene® F41X is fully biodegradable and compostable according to EN13432 and is certified “OK compost HOME” by TÜV Austria (up to a maximum thickness of 30µm).

- In a laboratory-scale composting test at ambient temperature (28°C), simulating home composting processes (procedure based on ISO 20200), Ecolene® F41X film of 30µm thickness was completely disintegrated after 10 weeks.

- In an industrial composting facility, under controlled temperature of 60°C, Ecolene® F41X film of 30µ thickness completely disappeared and no pieces of film could be retrieved after 4 weeks of composting.

- Despite its biodegradability, products made of Ecolene® F41X should only be disposed of in a controlled waste management environment.

Renewability – Biobased carbon content:

- Ecolene® F40T contains >50% of renewable raw materials

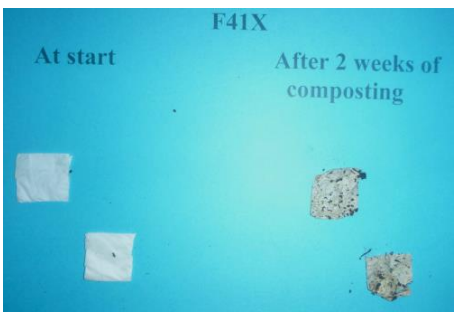
- The biobased carbon content according to ISO 16620-2 is 41% (as a fraction of total organic carbon content).

Composting test Ecolene® F41X (at 28°C)

After an incubation period of 4 weeks

After an incubation period of 8 weeks

After an incubation period of 10 weeks



Packaging and storage

Ecolene® resin is supplied in 25kg bags or 1T big bags. Transportation and storage temperatures should not exceed 70°C. Well packaged product should be stored under 23°C and used within 12 months.

Manufacturer

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