



Technical Data Sheet

HydroPol™ 33100 Series

Pellet Specification

Description

HydroPol™ 33100 series are modified co-polymers based on vinyl acetate hydrolysed monomers. HydroPol™ 33100 series have been specifically formulated for melt extrusion coating and co-ex film constructions. It has excellent affinity with other hydrophilic polymers such as cellulose and PLA offering enhanced barrier. HydroPol 33100 series as a paper/paperboard coating is designed to re-pulp in commercial paper recycling systems at 40°C.

Properties

Particle Size 4-5 mm

Density 1.12 g/cm³

Peak Melting Temperature 185°C

Non-Toxic

All the HydroPol™ 33100 series are non - toxic and all raw materials are listed as approved as direct food additives and food contact by EU and US regulatory listings.

Barrier Properties

All the HydroPol™ 33100 series have high resistance to animal, mineral and vegetable oils, aliphatic and aromatic hydrocarbons, ethers, esters and ketones. They also offer excellent barriers to Oxygen.

Biodegradable

All the HydroPol™ 33100 series are inherently biodegradable. Biodegradation has been observed by at least 20 different genera of bacteria and several yeasts and moulds which occur in activated sludge, compost, facultative ponds, landfills, anaerobic digesters and septic systems and in natural soil and aquatic environments. Sturm (aquatic) biodegradation tests show that the formulations degrade in the presence of activated sewage sludge at a similar rate to cellulose.

HydroPol™ 33100 series has shown no ecotoxicological effect in Marine environments according to ASTM D6691.

Testing for Composability and Anaerobic Digestion is ongoing.

Anti-Static

Because of their high hydroxyl group content and hygroscopicity, HydroPol™ compounds are inherently static dissipative, similar to cellophane, and cause little frictional static charging. Surface resistivities are in the range of 10⁵–10⁶ ohms/m².

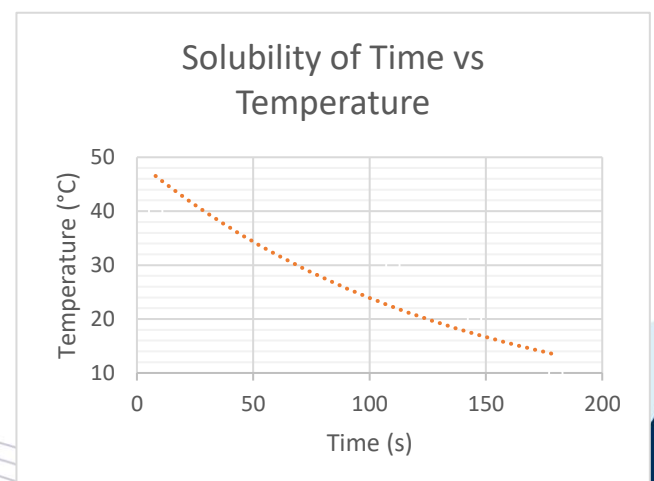
Indicative Properties

Re-pulpable

HydroPol™ 33100 series coated paper disintegrates with complete dispersion of fibres when re-pulped at 40°C and above (coating is almost non-detectable when re-pulped at 20°C) meets criteria outlined in ISO 5263/1 Laboratory Disintegration of chemical pulps.

Solubility

Each grade of HydroPol™ is engineered to solubilise at the maximum temperature for the right application. For example, our medium Hydrolysis variant designed for extrusion coating will more readily dissolve at lower temperatures to ensure 100% solubility when combined with tougher substrates.



Mechanical Property	Unit				Method	
Tensile Strength on 25µm film	MPa	Stress at Maximum MD	79.206	Stress at Maximum CD	65.684	ASTM D882
	%	Elongation at Break	225.854	Elongation at Break	139.062	
Tear Strength (Elmendorf)	g	MD	TBC	CD	TBC	ISO 6383-2
Burst index	kPa	Paper	TBC	Board	TBC	ISO 2758 and 2759
Dart puncture on 25µm film	g		272			ASTM 1709
Coefficient of Friction		Static	0.399	Dynamic	0.402	ASTM D1894
Seal Strength 0.5s @ 180°C	kN/m		TBC			ASTM F88

Barrier Properties	Unit				Method	
OTR: 0% RH and 23°C on 35 µm film	cc/m ² /24 hr		0.0581			ISO 1505-2
MVTR:	g/m ² /24 hr		TBC	N/A	TBC	ASTM F1249
WVTR; 85% RH and 23°C	g/m ² /24 hr	Card	150	Paper		ISO 15106-2
Kit	1-12		12			Tappi T559
Cobb 60s	g/m ²		TBC			ISO 535

All data shown is indicative only. MD = Machine Direction CD = Cross Direction

Storage and Shelf-life

Hydropol pellets have a minimum shelf life of one year if kept in cool, dry conditions with controlled humidity. Packaging should be resealed after opening to protect against moisture.

