



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.

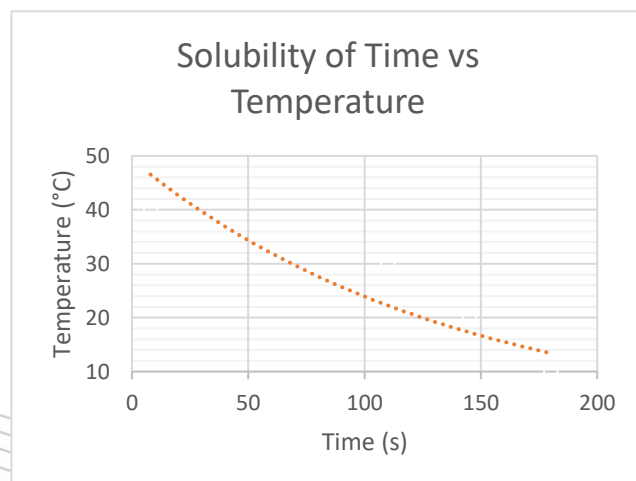
Indicative Properties

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

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 Commercial in Confidence
 Typical Properties; these are not to be construed as specifications

