



Technical Data Sheet

Hydropol™ 30164P

Product Information

Hydropol™ is an Aquapak Polymers product based on polyvinyl alcohol, which are water-soluble polymers. The properties of the various grades are mainly governed by the molecular weight and the remaining content of acetyl groups.

Product Description

Hydropol™ 30164P is a hot water-soluble polymer specifically formulated for blown film.

- Non - toxic and all raw materials are listed as approved as direct food additives and food contact by EU and US regulatory listings.
- High resistance to animal, mineral and vegetable oils, aliphatic and aromatic hydrocarbons, ethers, esters and ketones.
- Excellent barrier to Oxygen (OTR), Carbon Dioxide (COTR) and Nitrogen (N2TR).
- 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, septic systems and in natural soil and aquatic environments. 15µm film meets the biodegradation requirements of EN13432.
- Sturm (aquatic) biodegradation tests show that the formulations degrade in the presence of activated sewage sludge at a similar rate to cellulose.
- No ecotoxicological effect in marine environments according to ASTM D6691.
- Due to Hydropol™ having a high hydroxyl group content and hygroscopicity they are inherently static dissipative, like cellophane, and cause little frictional static charging. Surface resistivities are in the range of 105–106 ohms/m².

Supplied Form and Storage Recommendations

Hydropol™ 30164P is supplied as round pellets in bulk containers.

Hydropol is recommended to be packaged in metallised packaging with a WVTR <0.1 g.mm/ (m².d. Pa). If metallised packaging is not available, then an alternative is acceptable provided it has a WVTR <0.1 g.mm/ (m².d. Pa).

Storage must not exceed 12 months when stored in cool, dry conditions with controlled humidity. When storing pellets packaging should be resealed after opening to protect against moisture.

Applications

Hydropol™ 30164P has been developed for the conversion to films using a blown film process. Typical applications are packaging films, garment bags and compost bags. In view of numerous factors influencing functionality and shelf life of Hydropol™ films and finished products made thereof these parameters must be tested by the converters before utilisation.

Typical Basic Material Properties of Hydropol™ 30164P

| Property | Unit | Test Method | Hydropol 30164P |
|----------------------------------|-------------------|-------------|-----------------|
| Particle size | mm | ISO 2591 | 4-5 |
| Bulk Density | kg/m ³ | | 705-815 |
| Solid Density | kg/m ³ | | 1200-1325 |
| Melting Temperature (peak) | °C | DSC | 216 |
| Melt Flow Rate (MFR) 230°C, 10kg | g /10mins | ISO 1133 | 4.0 – 7.0 |

Typical properties of Hydropol™ 30164P blown film, 25 µm*

| Property | Unit | Test Method | Hydropol 30164P |
|---------------------------------------|--------------------------|-------------------------|-----------------|
| Transparency | % | | 92.5 |
| Tear strength MD | mN | ISO 6383-2 Elmendorf | >4000 |
| Tear strength CD | mN | ISO 6383-2 Elmendorf | >7250 |
| Tensile strength @ Max Load MD | N | ISO 527-1 | 50-80 |
| Tensile strength @ Max Load CD | N | ISO 527-1 | 50-90 |
| Elongation MD | % | ISO 527-1 | 50-80 |
| Elongation CD | % | ISO 527-1 | 60-100 |
| Dart | g | ASTM 1709 | 100 |
| Permeation rates ** | | | |
| Oxygen (23°C 0% R.H) 35 µm film | cc/m ² /24 hr | ISO 15105 | 0.0199 |
| KIT | 1-12 | Tappi T559 | 12 |

MD = Machine Direction

CD = Cross Direction

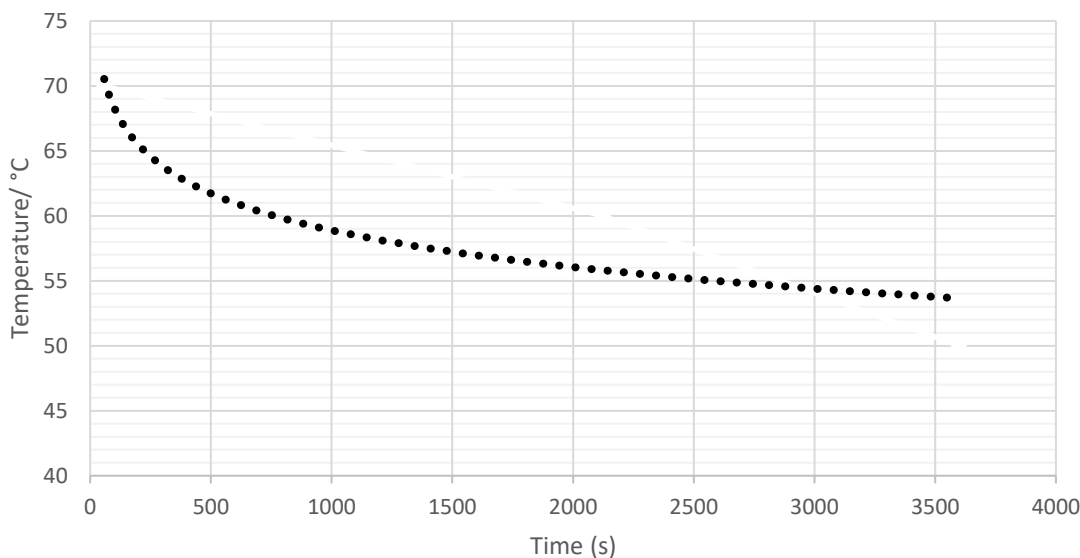
*Indicative results only and can vary with storage conditions of film. These have been tested at 23°C and 50% R.H.

**Indicative results based on 30163P. Aquapak do not believe to be any significant differences.

Solubility of Hydropol™ 30164P film, 25µm

| Property | Unit | Test Method | Hydropol 30164P |
|-----------------|---------|--------------------|-----------------|
| 70°C, tap water | seconds | AQU QALAB SOP 4 | < 60 |
| 60°C, tap water | minutes | | 5 - 35 |
| 50°C, tap water | minutes | | >60 |

30164P Average Solubility of Time vs Temperature



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In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance for a special purpose.

Many factors beyond Aquapak's control can affect the use and performance of an Aquapak product in a specific application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform.

Since these factors are uniquely within the user's knowledge or control; it is essential that the user evaluate the Aquapak product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

* TM = Hydropol is a registered trademark of Aquapak Polymers Ltd

Provisional

