hydropol™

an aquapak product

The solution to fashion's polybag problem

Make a difference now & into the future

Hydropol™ is supplied in standard resin pellet form. It can be used by your polybag manufacturers in their existing machines.

Alternatively, be introduced to manufacturers already making garment bags from Hydropol.

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Hydropol™ is made from a patent-protected Polyvinyl Alcohol (PVOH) and can be thermally processed.
Full technical transfer available.

Bags made from Hydropol™ offer all the necessary features of traditional polybags:

- Strength and puncture resistance
- Clarity of film
- Protection from leakages and dirt

With zero end-of-life issues

- Dissolves immediately in hot water
- Compostable
- Does not interfere with plastic recycling
- Suitable for aerobic and anaerobic landfill
- Degrades naturally on land or in ocean

Hydropol™ is a game-changing material in the packaging landscape, which remains relatively unchanged since 2019:

The majority of garment & accessory bags are still made from Low Density Polyethelene

LDPE

Flexible products are more difficult to recycle

especially as they tend to be contaminated by the item they are packaging.

Source: **Plastic Expert**

Only **29%**

Of recycling capacity across Europe can recycle LDPE. Of this 15% is in Germany, 14% in Italy, 13% Spain

Source: **Plastic Recyclers Europe**

The most common barrier to recycling plastic packaging remains **uncertainty [of consumers] over which plastics can be recycled,** often resulting in material entering the wrong waste stream and being lost to the economy

Source: **Sustainability.com**

Film recycling challenges remain

- Low collection rates & low quality of input materials
- Lack of design for recycling
- Evolution of the recycling technologies needed

Source: **Plastic Recyclers Europe**

In the UK, just 6%

of ALL* flexible plastic packaging is recycled. This includes Polypropylene, PET and LDPE!

Source: **The UK Plastics Pact**

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While serving an essential purpose in protecting garments and products from dirt, oil & grease, water leakages and other potential damage during transit and storage, the traditional LDPE polybag is a concern for conscientious fashion brands due to the global plastic pollution crisis.

To date, fashion brands have had to make compromises between functionality and end-of-life options when studying alternatives to single use plastics in their supply chains.

Hydropol™ offers an all-in solution to the polybag problem, providing all the necessary features of the polybag, while ensuring it can cause no harm at the end of it's life cycle, regardless of how it is disposed of.

An overview of LDPE vs Compostable vs Hydropol Garment Bags

Whilst traditional garment bags provide protection and functionality, their end of life disposal is limited to recycling which is not always available. Compostables (assuming this option is chosen by the end user) offer lower environmental impact but reduced functionality. New-gen materials such as Hydropol retain the properties needed to protect items together with multiple end of life options, removing the reliance on end-users to leave no trace on the environment.

Required Properties		LDPE Bags	Starch-Based Compostable Bags	Hydropol™ Bags
Transparency (to see garments, read labels and scan bar codes)		✔	✗	✔✔
Moisture permeability		✗	✔	✔✔
Strength		✔✔	✔	✔✔✔
Puncture resistance		✔	✗	✔✔✔
Heat seal		✔✔	✔	✔✔✔
End-of-life	Reuse / Recycling	✔	✗	✔
	Biodegradability	✗	✔	✔
	No Microplastics	✗	✔	✔
	Dissolvable	✗	✗	✔✔✔
	Non-toxic to environment	✗	✔	✔✔

Hydropol Checklist

Functionality & Environmental considerations	Yes / No	Notes
Transparency	✔✔	Hydropol is a 100% transparent. Barcodes can be read through it. It is easy to print upon and does not require corona treatment
Moisture permeability	✔✔	Hydropol is hydrophilic (water loving), allowing fabrics to 'breathe'
Strength / puncture resistance	✔✔✔	3x strength of LDPE. Possible opportunities to down-gauge without loss of strength
Barrier properties	✔✔✔	Good oil and grease barrier to prevent product damage
Heat seal	✔✔✔	Yes, Hydropol is ideal for heatseal. Removes need for adhesive strip and tearstrip waste
Bio source available	✔	There is a route to biosource once volumes increase Bio source available
End-of-life		
Reuse	✔	Long lasting and easy to reuse between distribution and stores plus to/from customer
Recycling	✔	It is possible to recycle Hydropol however waste management facilities not yet geared up due to low demand at the moment
Biodegradability	✔	Inherently biodegradable in land and sea. Non toxic and marine-safe. Will leave no trace in the environment even if it is accidentally released
Are harmful microplastics formed during biodegradabity	✗	No toxic microplastics form thanks to the hydrophilic nature of Hydropol
Dissolvability	✔	Garment bags easy to dissolve in hot water and best disposal option for consumers using kettle or in dishwasher. Option for reuse as food waste bag as they will dissolve in AD plants and also commercial compostic (anaerobic and aerobic digestion)
Non-toxic to environment	✔	Non toxic to environment. Will not harm oceana flora and fauna. If eaten by wildlife such as turtles, whales and polar bears, it will be digested by them although not as nutritious as food

Hydropol™ is an innovative technology developed for the circular economy by Aquapak Polymers. Based on PVOH technology, a naturally biodegradable and hydrophilic polymer, Hydropol offers an excellent solution to replace plastic in many applications.

Aquapak's patent-protected polymer technology is based on thermally processible polyvinyl alcohol (PVOH, PVA). The highly versatile Hydropol family of products is produced in pellet form to enable all downstream conversion processing methods to be used.

Hydropol™ can be processed into a single layer or co-ex film, a laminate or extrusion coating, barrier layer, or made into fibers and nonwovens. Hydropol garment bags are produced via a network of partner factories.

Aquapak

Accelerating the transition to the Circular Economy

Rebecca Pickard
Channel Partner - Fashion Sector

t: +44 (0)7473 324657
e: rpickard@aquapakpolymers.com
www.aquapakpolymers.com

NEW PLASTICS ECONOMY Global Commitment