# Material Choices & Innovative Materials

Book Chain Project 07.07.21


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# The Challenges

# What does the consumer want?

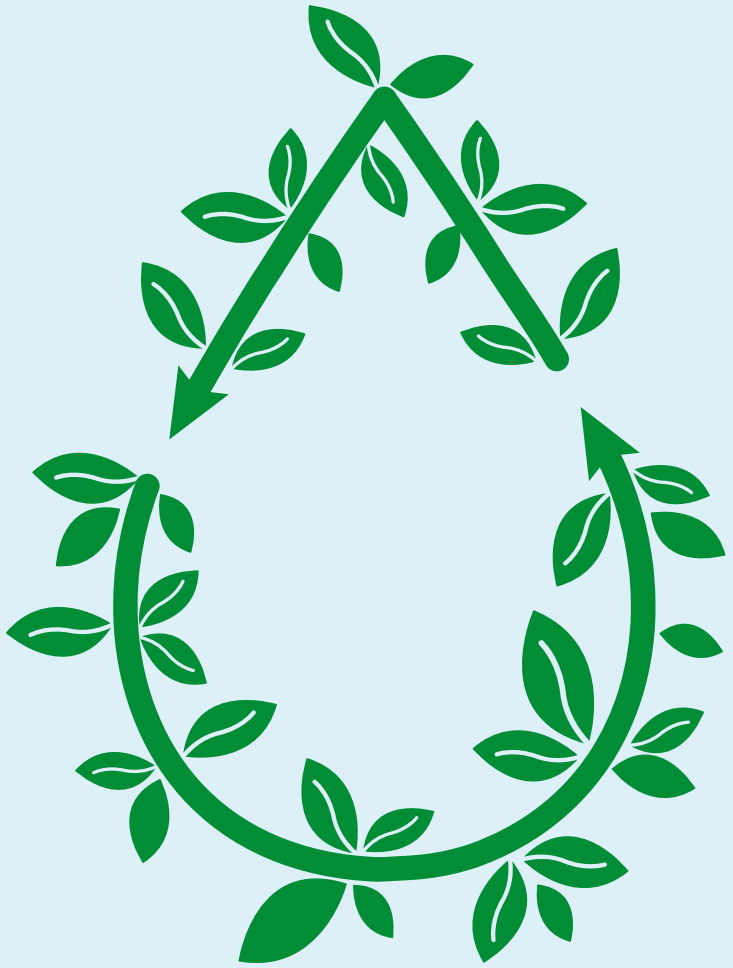
## Forbes - April 2021

88% of U.S. and U.K. consumers want brands to help them be more environmentally friendly in their daily lives.

A survey by Oceana found that 87% of consumers think major online retailers should curb the amount of plastic packaging they use.

Just because some plastic packaging can be reused or recycled doesn't mean it actually is.

Less than 2% of plastic waste produced since the 1950s has been recycled, meaning more than 90% has been landfilled or disposed of in the natural environment.



**Conclusions:**

**Move away from polluting plastic | Want easily recyclable items**

# Plastic Reduction Challenges

## Functionality and End-of-life

### Designing for sustainability must consider:

- Encouraging people to keep buy physical books
- How will the product be used; functionality needed and its life span
- Supply chain requirements from raw materials to consumer
- End of life (intended disposal via waste streams and what else consumer might do with them)

### For example:

- Physical books seen as environmentally friendly
- Book durability – e.g. cover strength and barrier properties
- Ecommerce packaging from a warehouse to the consumer and/or retail packaging eg carrier bag
- Paper recyclability – impact of laminated cover and glue on recyclability

### Challenges:

- Consumer expects the supply chain to solve the problem
- End-of-life options need to be factored in when designing / manufacturing books eg the impact of lamination plastics and glue in recycling mills
- Compromises may still be needed

### Solutions:

- Consider books from its raw materials – paper, glue, ink etc – through to the consumer, how they are used and disposed of
- Replace traditional plastics with innovative alternatives
- Golden nuggets v evolving solutions improving over time

# Material Innovation

## Introducing Hydropol™

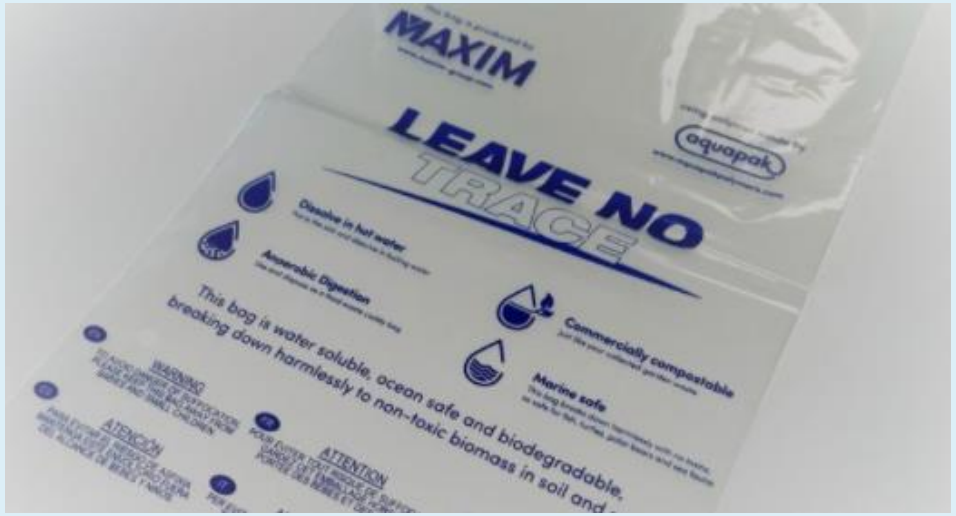
# HIGH
## FUNCTIONALITY

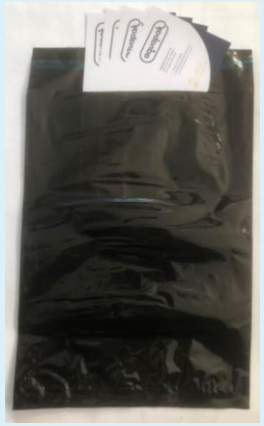
# LOW
## ENVIRONMENTAL IMPACT

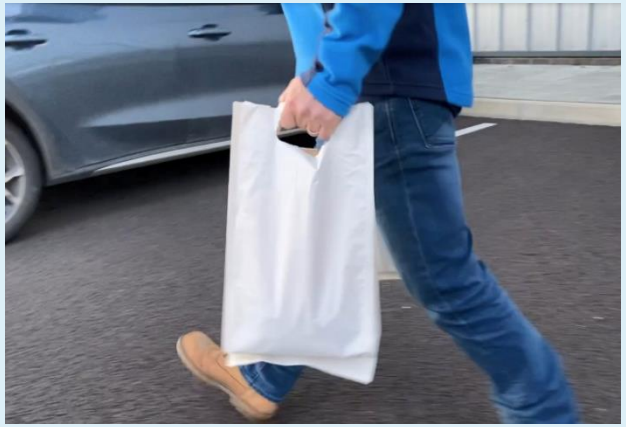
# Hydropol

## Example applications

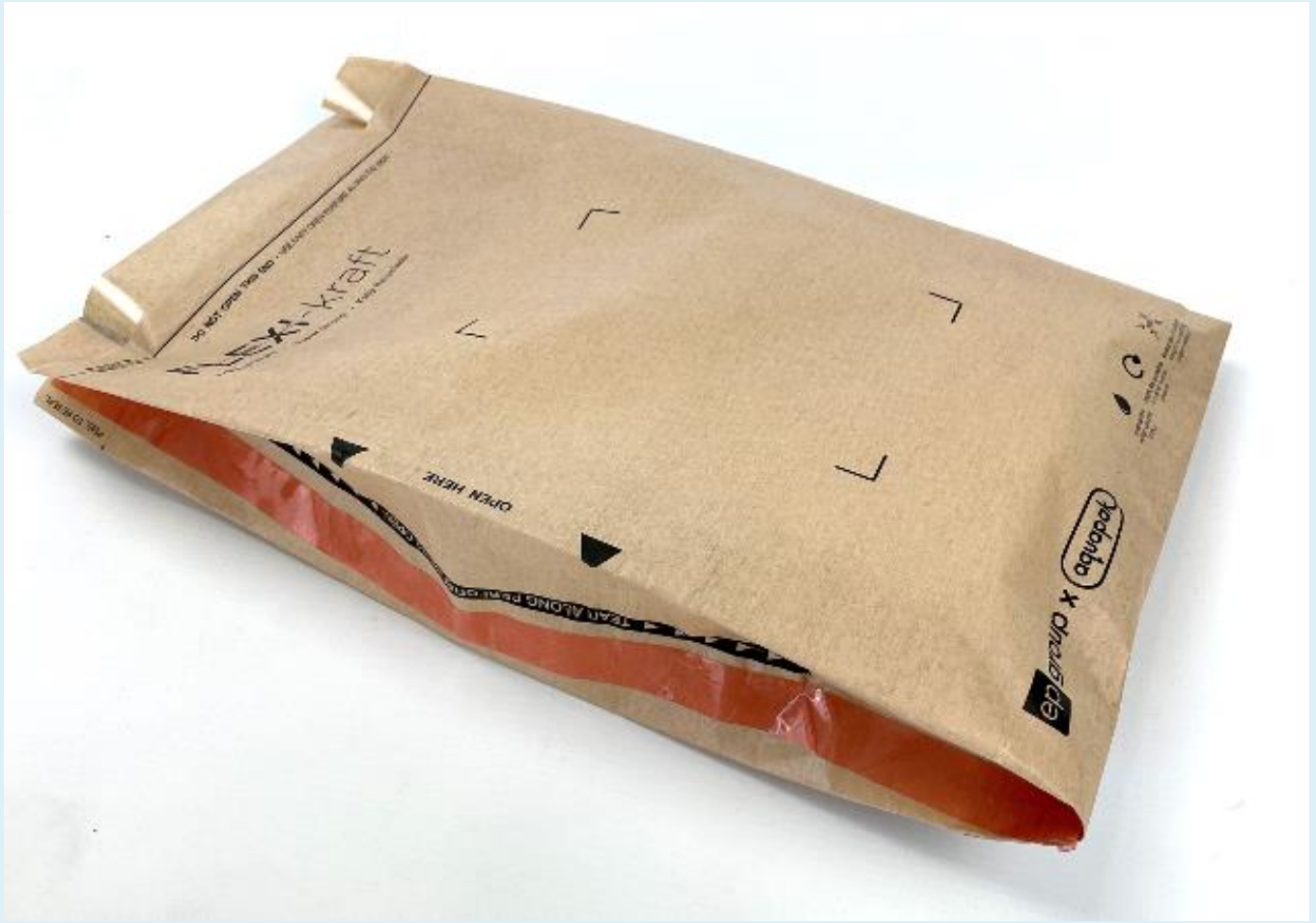
### Protective bags, mailers & carrier bags





### Paper-lined mailing bags



# Hydropol End-of-Life

## Multiple options and performance

### Dissolvable:

Carrier and mailer bags made from pure Hydropol™ can dissolved in hot water down the sink at home or reused as food waste bags. The Hydropol™ biodegrades harmlessly and safely in the waste-water stream.

### Reuse as Food Waste

Bags made from Hydropol™ can be disposed of with household food and green waste. Hydropol™ is fully compatible with anaerobic digester and composters and contributes to gas yield. A great way to reuse Hydropol bags!

### Paper Recycling:

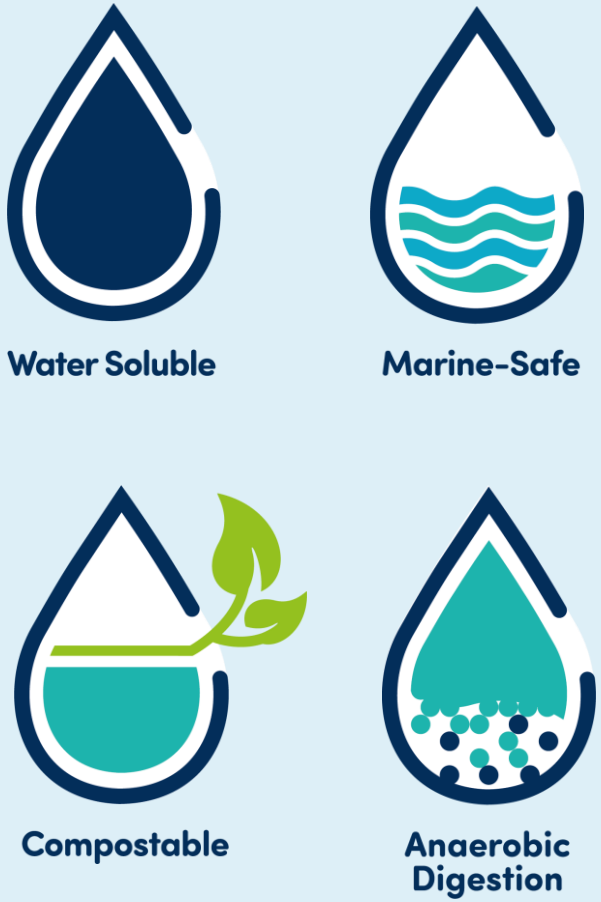
Hydropol™ laminated or extrusion coated onto paper can be disposed of with household paper waste for recycling. Hydropol™ is full compatible with repulping systems and paper waste disposal.

### Recycling waste:

Hydropol™ is a thermoplastic and is therefore recyclable. Aquapak is open to talking to brands, manufacturers and waste collectors regarding recycling Hydropol and closed loop systems

### General Waste:

Hydropol™ can be place with the general waste and sent to landfill. Hydropol™ will safely and harmlessly decompose.



# Thank You

www.aquapakpolymers.com

For more information, please contact:
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