

# Design For Recycling

## GUIDELINES for packaging

\*Polymer resin can be either fossil- or bio-based, virgin or recycled.

\*\*Temporary solution

\*\*\* Guidelines are non-company specifics. Barrier structures compatible with recycling are listed in RecyClass Approval page.

\*\*\*\* Nitrocellulose (NC) based inks impact on recyclability is under investigation by RecyClass.

**CIRCPACK**  
by **VEOLIA**

### Material:

- PET bottle
- PET tray
- PP rigid
- PP flexible
- PE rigid

### PE flexible

- PS
- Paper & cardboard
- Beverage carton
- Glass
- Steel
- Aluminium



		Yes - Full compatibility	Conditional - Limited compatibility	No - Low (or no) compatibility
Main body	Material*	Oriented and non-oriented LDPE, LLDPE (including PE-plastomers), HDPE; EVA, EBA, EEA, EMA copolymers with acrylate monomers representing <= 5 wt% of the film; EMAA, EAA copolymers & ionomers <= 20%	Multilayer PE/PP <a href="#">with PP ≤ 5%</a>	Multilayer PE/PP with PP > 5%; Any other polymer (e.g. PET, PVC, etc.)
	Colours	Unpigmented; transparent	Light colours; translucent colours	Dark colours; black; carbon black
	Size	> A4 or > 50 x 50 mm once compacted	< A4 format or between 20 x 20 and 50 x 50 mm once compacted (Sorting test)	< 20 x 20 mm
	Product residues	A if the index Easy-to-empty is < 5%; B if the index is < 10%	C if the index Easy-to-empty is < 15%	D if index <20%; E < if index 25%; F if index > 25%
	Barrier***	SiOx and AlOx without additional coatings	<a href="#">≤ 5% EVOH</a> (in polyolefin combination film); <a href="#">≤ 15% PA 6/66 copolymer with melting temperature &lt; 192°C and incorporating ≥ 10% PE-g-MAH tie layers</a>	> 5% EVOH (in polyolefinic combination film); Any other PA; Metallisation; PVOH; PVC, PVDC barrier layer; any other barrier layer; aluminium
	Additives	Additives that do not increase the density higher than 0,97 g/cm <sup>3</sup>		Bio-/oxo-/photodegradable additives; foaming agents used as expanding chemical agents; Additives that do increase the density higher than 0,97 g/cm <sup>3</sup> (CaCO <sub>3</sub> , talc, glass fibers, etc.
	Laminating adhesives	<a href="#">Laminating adhesives approved</a> as fully compatible by RecyClass; To be tested if in combination with a barrier material	<a href="#">Aliphatic polyurethanes ≤ 2,5%; Laminating adhesives approved</a> as limited compatible by RecyClass; To be tested if in combination with a barrier material	<a href="#">Aliphatic polyurethanes &gt;2,5%</a> ; Aromatic polyurethanes & Water-based acrylics; Laminating adhesive specially developed for high thermal applications above boiling and/or for high chemical resistance (to be tested); Any other laminating adhesives (Epoxy, etc.)
Attachments	Closure Systems	PE-LD, PE-LLD (including PE-plastomers), PE-HD	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm <sup>3</sup>
	Liners, Seals and Valves	PE-LD, PE-LLD (including PE-plastomers), PE-HD	PP, removable aluminium liddings	Metal, aluminium, PVC, PET, PETG, PS, PLA, foiled paper, non PO or foams with density < 1 g/cm <sup>3</sup>
	Other Attachments	PE-LD, PE-LLD (including PE-plastomers), PE-HD	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm <sup>3</sup>
Decoration	Inks****	PU-based inks, Non-bleeding inks compliant with <a href="#">EuPIA Exclusion Policy</a>		Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy, NC-based inks
	Labels	PE	PP	Metallized labels, any other; paper labels
	Adhesives for labels	Water soluble or water-releasable at less than 40°C		Adhesives non-soluble in water or non-releasable in water at less than 40°C
	Direct Printing	Laser marked print; Printed production or expiry date	Printing covering < 50%**	Printing covering > 50%**