

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.

The DfR guidelines for plastic packaging are 100% aligned with...
 For more info, please visit <https://recyclclass.eu/>

RecyClass

CIRCPACK
 by VEOLIA

Material:

- PET bottle
- PET thermoform
- PP rigid
- PP flexible
- PE rigid

PE flexible

Transparent

- 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 with PP ≤ 5%	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	Packaging surface > 100 cm²	Packaging surface between 30 and 100 cm²	Packaging surface < 30cm²
	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	≤ 5% EVOH (in polyolefin combination film); ≤ 15% PA 6/66 copolymer with melting temperature < 192°C and incorporating ≥ 10% PE-g-MAH tie layers	> 5% EVOH (in polyolefin combination film); Any other PA; Metallisation; PVOH; PVC, PVDC barrier layer; AlOx coating with PVOH primer ; any other barrier layer; aluminium
	Additives	Additives that do not increase the density higher than 0,97 g/cm ³		Bio-/oxo-/photodegradable additives; foaming agents used as expanding chemical agents; Additives that do increase the density higher than 0,97 g/cm ³ (CaCO ₃ , talc, glass fibers, etc.)
Attachments	Laminating adhesives	Aliphatic polyurethanes ≤ 2.5% Laminating adhesives approved as fully compatible by RecyClass; To be tested if in combination with other barrier than EVOH	Water-based acrylics ≤ 2.5 % ; Laminating adhesives approved as limited compatible by RecyClass; To be tested if in combination with other barrier than EVOH	Aliphatic polyurethanes >2.5% and water based acrylics (to be tested); 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.)
	Closure Systems	LDPE, LLDPE (including PE-plastomers), HDPE	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm ³
	Liners, Seals and Valves	LDPE, LLDPE (including PE-plastomers), HDPE	PP, removable aluminium liddings	Metal, aluminium, PVC, PET, PETG, PS, PLA, foiled paper, non PO or foams with density < 1 g/cm ³
	Other Components	LDPE, LLDPE (including PE-plastomers), HDPE	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm ³
Decoration	Inks	PU-based inks, Non-bleeding inks compliant with EuPIA Exclusion Policy ; Printed production or expiry date	Printing with coverage < 50 %**	NC-based inks; Bleeding inks; Inks non-compliant with EuPIA Exclusion Policy; Printing with coverage > 50 %** PVC co- and terpolymer binders; Any other chlorinated binders
	Feedstock Label Material	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
	Other Decorative Technologies	Laser marked print; Printed production or expiry date	Laser marking with coverage < 50 %**	