Design For Recycling

GUIDELINES for packaging

* Decorative technologies must not hinder the recognition of the underlaying PET-polymer, such as size, print, mass colouration and/or barrier. The following size indications can be considered to ensure the recognition of PET:
- Size of non-PET surfaces on containers > 500 ml: < 70% coverage
- Size of non-PET surfaces on containers < 500 ml: < 50% coverage

The DfR guidelines for plastic packaging are 100% aligned with…. RecyClass
For more info, please visit **https://recyclass.eu/**

CIRCPACK by VEOLIA

Material:

- PET bottle
- PET thermoform
- PP rigid — Coloured
- 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*	PP TPO <= 10 % (full olefinic or aliphatic structure); TPS<=10%	PE ≤ 10%	Multilayers with PLA; PVC; PS; PET; PETG; PE > 10%, TPO (containing rubber, e.g EPDM)
	Colours	All colours	Black inner layer and dark colours (NIR-detectable)	Non NIR detectable colours
	Size		Items compacted ≤ 5 cm	Items compacted ≤ 2 cm
	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	EVOH ≤ 6% + PP-g -MAH tie layers with MAH ≥ 0.1wt% and EVOH:tie layers ratio ≤ 2;	EVOH > 6% + PP-g -MAH tie layers with MAH ≥ 0.1wt% and EVOH:tie layers ratio ≤ 2; EVOH ≤ 1% with any other tie layers; Metallisation	EVOH > 1% with different tie layers; PA; PVDC; Aluminium
	Additives	Additives that are unavoidable in processing (stabilizers, antioxidants, lubricants, nucleating agents, peroxides) and density remains <0,97 g/cm³	Mineral fillers ($CaCO_3$, talc) not increasing density more than 0,97 g/cm³	Additives changing material density >1 g/cm³; Flame retardant additives, plasticizers; Bio-/oxo-/photodegradable additive
	Laminating adhesives	Acrylics <= 2.5 %; PU < 3 %; Laminating adhesives approved as fully compatible by RecyClass; To be tested if in combination with other barrier material than metallisation,	Laminating adhesives approved as limited compatible by RecyClass; To be tested if in combination with a barrier material, PU between 3 and 4.5 wt%	PU > 4.5wt% ; To be tested: Acrylics; Laminating adhesives specially developed for high thermal applications above boiling and/or for high chemical resistance
Attachments	Closure Systems	PP	HDPE; LDPE; LLDPE; MDPE; PET; PETG; PS; PLA (all with a density >1g/cm³), Removable aluminium lidding	Non-PO and/or foams with density < 1 g/cm³; Aluminium; Metal; PVC
	Liners, Seals and Valves	PP; TPO; TPS <= 1%; PO Foamed	HDPE; LDPE; LLDPE; MDPE; TPS; PET, PETG, PLA, PS (d>1 g/cm³); removable silicon with d>1 g/cm³; PO foamed <= 1%	Non-PO and/or foams with density < 1 g/cm³; Any other TPE ; Aluminium; Metal; Foiled paper; PVC
	Other Components	PP	PE with density <1 g/cm³; PET; PETG; PS; PLA (d >1 g/cm³)	Alu; PVC; Glass; Non-PO and/or foams with d< 1 g/cm³;
Decoration*	Inks	Non-bleeding inks compliant with EuPIA Exclusion Policy; Inks & lacquer for direct printing representing <1 total wt%	More than 1 wt% direct printing (to be tested)	Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy; PVC binders
	Facestock Label Materials	PP (all with density < 1 g/cm³)	PE, PO (with density < 1 g/cm³); PET, PETG, PLA, PS (all with density > 1 g/cm³); Paper without fibreloss; PO-foamed	Labels that hinder PP recognition; labels in non PO-materials with d< 1 g/cm³ ; Paper labels with fibreloss; alu; metallised labels; PVC
	Adhesives for labels	Releasable in the recycling process	Non-releasable adhesive approved by RecyClass in combination with filmic PO labels	Non releasable
	Sleeves	Sleeves in PO (all with density < 1 g/cm³), Self-separable plastic and carboard sleeves under mechanical stress (sorting test mandatory)	Sleeves in PE (density < 1 g/cm³); Sleeves in PET, PETG, PET-C, PLA, PS (density > 1 g/cm³), Cardboard sleeves without fiberloss (sorting test mandatory)	Sleeves that hinder the PP recognition; Sleeves in non-PO materials with d< 1 g/cm³ ; Cardboard sleeves with fiberloss; Aluminium; Metalised sleeves; Heavily inked sleeves; PVC
	Other Decorative Tech	Laser marking	Electroplating on attachments (with density > 1 g/cm³); Cold transfer and hot stamping technologies not hindering detection	Electroplating on attachments (with density <1 g/cm³)