

Design For Recycling

GUIDELINES for packaging

* Decorative technologies must not hinder the recognition of the underlying 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...
 For more info, please visit <https://recyclclass.eu/>

RecyClass

CIRCPACK
 by VEOLIA

Material:

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

PE rigid

Coloured

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



		Yes - Full compatibility	Conditional - Limited compatibility	No - Low (or no) compatibility
Main body	Material	HDPE; Multilayer PE with HDPE prevalence (LLDPE, LDPE, MDPE), TPO <= 10 % (full olefinic or aliphatic structure)	PP <= 10%	Multilayers HDPE with PLA; PVC; PS; PET; PETG; 10% < PP <= 30% (-2 classes) ; PP > 30% (-3 classes) , TPO (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 < than 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 <= 6.0%wt + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layer ratio <= 2 ; Enkase (fluorination) ; In-mould fluorination ; SiOx Plasma coating	EVOH > 6.0%wt + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layer ratio <= 2 ; EVOH <= 1% with any other tie layers; Plasma Fluorination ; Metallisation; PVOH <= 1%	EVOH > 1% with any other tie layers; PA; PVDC; Aluminium; PVOH > 1%
	Additives	Additives that are unavoidable in processing (stabilizers, antioxidants, lubricants, nucleating agents, peroxides) and density remains <0,97 g/cm ³	Mineral fillers (CaCO ₃ , talc) not increasing density more than 0,97 g/cm ³	Additives changing material density >1 g/cm ³ ; Flame retardant additives, plasticizers; Bio-/oxo-/photodegradable additive
	Laminating adhesives	Polyurethanes and water-based acrylics < 3 %; To be tested if in combination with other barrier materials than EVOH and metallisation	Polyurethanes and water-based acrylics 3-5%; To be tested if in combination with a barrier material	Polyurethanes and water-based acrylics >5%; laminating adhesive developed for high thermal applications above boiling and/or for high chemical resistance (to be tested); Any other laminating adhesives
Attachments	Closure Systems	HDPE; LDPE; LLDPE; MDPE	PP; PET; PETG; PLA; PS (all with a density > 1 g/cm ³); Removable aluminium lidding	Non-PO and/or foams with density <1g/cm ³ ; Aluminium; Metal; PVC
	Liners, Seals and Valves	HDPE; LDPE; LLDPE; MDPE; TPO; TPS <= 1 %; Foamed PO	PP; TPS; PET, PETG, PLA, PS (all with a density > 1 g/cm ³); Removable silicon with a density > 1 g/cm ³ , PO foamed <= 1%	Non-PO and/or foams with density <1g/cm ³ ; Any other TPE, Aluminium; Metal; Foiled paper; PVC
	Other Components	HDPE; LDPE; LLDPE; MDPE	PP; PET; PETG; PS; PLA all with density >1 g/cm ³ ;	Alu; PVC; Glass components; Non-PO and /or foams with d< 1 g/cm ³
	Inks	Non-bleeding inks compliant with EuPIA Exclusion Policy ; Inks & lacquer for direct printing representing < 1 wt% of the total packaging, not hindering NIR detection	More than 1wt% direct printing (to be tested)	Bleeding inks; Inks non-compliant with EuPIA Exclusion Policy; PVC co- and terpolymer binders; any other chlorinated binders
Decoration*	Facestock for Labels	Labels in PE (all with density < 1 g/cm ³); In-Mould-Labels in PE printed with < 1 wt% of the total packaging (except dark colours and bleeding inks)	Labels in PP, PO (with d < 1 g/cm ³); Labels in PET, PETG, PLA, PS (all with d > 1 g/cm ³); Labels in Paper without fibreless; PO-foamed labels; Any other In-Mould-Labels in PE (except bleeding inks)	Labels that hinder the recognition of the PE; Labels in non PO-materials with d < 1 g/cm ³ ; Paper labels with fibreless during recycling process; Cardboard or paper In-Mould-Labels;Aluminium; Metallised labels; PVC
	Adhesives for labels	Removable in the recycling process	Non-water soluble/non-releasable approved by RecyClass in combination with film PO labels; Acrylic emulsion ; Hotmelt rubber	Not removable in the recycling process
	Sleeves	Sleeves in PE (all with density < 1 g/cm ³); Self-separable plastic and cardboard sleeves under mechanical pressure (sorting test mandatory)	Sleeves in PO (with density < 1 g/cm ³); Sleeves in PET, PETG, PET-C, PLA, PS (all with density >1 g/cm ³); Cardboard sleeves without fiberloss (sorting test mandatory)	Sleeves that hinder the recognition of the PE; Sleeves in non PO-materials with d < 1 g/cm ³ ; Cardboard sleeves with fibreless during recycling process; Alu; Metallised; Heavily inked sleeves; PVC
	Other Decorative Tech		Electroplating on attachments (with density > 1 g/cm ³); Cold transfer and hot stamping technologies not hindering detection	Electroplating on attachments (with density <1 g/cm ³)