Design For Recycling

GUIDELINES for packaging

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

* Decorative technologies must not hinder the recognition of the underlaying PE-polymer. Features as size, print, mass colouration and/or barrier might require to perform a Sorting Evaluation Protocol. Known misleading features are listed on the RecyClass Methodology and the following size indications can be considered to ensure the recognition of PE:
– Size of non-PE detectable surfaces on containers > 500 ml: < 70% coverage
– Size of non-PE detectable surfaces on containers < 500 ml: < 50% coverage

CIRCPACK by VEOLIA

Material:

- PET-bottles
- PET-trays
- PP rigids
- PP flexibles

PE rigids Coloured

- PE flexibles
- PS
- Paper & cardboard
- Beverage cartons
- Glass
- Steel
- Aluminium

		Class A-B Full compatibility for reprocessing	Class B-C Limited compatibility for reprocessing	Non-recyclable Low (or no) compatibility for reprocessing
Main body	Main Material*	HDPE; Multilayer PE with HDPE prevalence (LLDPE, LDPE, MDPE)	PP ≤ 10%	Multilayers HDPE with PLA; PVC; PS; PET; PETG; 10% < PP ≤ 30% (- 2 classes); PP > 30% (-3 classes)
	Material composition	A when PE content is > 95%; B when PE content is > 90% and all packaging features are FULLY compatible with recycling	C when PE content is > 70% and all packaging features are FULLY compatible with recycling	D when PE content is > 50%; E when PE content is > 30%; F when PE content is <30%
	Colours	All other 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 Easy to empty index	A if the index is < 5%; B if the index is < 10%	C if the index is < 15%	D if the index is < 20%; E < if the index is 25%; F if the index is > 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	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	EVOH > 1% with any other 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 the material density > 1 g/cm³; Flame-retardant additives, plasticizers; Bio-/oxo-/photodegradable additives
Attachments	Closure Systems	HDPE; LDPE; LLDPE; MDPE	PP; PET; PETG; PLA; PS (all with a density > 1 g/cm³); Removable aluminium lidding	Non-PO and/or foams with density <1g/cm³; Aluminium; Metal; PVC
	Liners, Seals and Valves	HDPE; LDPE; LLDPE; MDPE; TPO ≤ 1%; TPS ≤ 1%	PP; TPO; TPS; PET, PETG, PLA, PS (all with a density > 1 g/cm³); Removable silicon with a density > 1 g/cm³, PO foamed ≤ 1%	Non-PO and/or foams with density <1g/cm³; Any other TPE, Aluminium; Metal; Foiled paper; PVC
Decoration**	Label materials (PSL, wet-glue labels, wrap-around labels, IML)	Labels in PE (all with density < 1 g/cm³); In-Mould-Labels in PE printed with < 1 wt% of the total packaging (except dark colours and bleeding inks)	Labels in PP, PO (with density < 1 g/cm³); Labels in PET, PETG, PLA, PS (all with density > 1 g/cm³); Labels in Paper without fibreloss; 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 density < 1 g/cm³; Paper labels with fibreloss during recycling process; Cardboard or paper In-Mould-Labels; Aluminium; Metallised labels; PVC
	Adhesives for labels	Water soluble adhesive (@ less than 40°C); Water releasable adhesive (@ less than 40°C)	Non-water soluble or non-releasable adhesive approved by RecyClass in combination with filmic PO labels	Non-water soluble adhesive (@ less than 40°C); Non-water releasable adhesive (@ less than 40°C)
	Sleeves	Sleeves in PE (all with density < 1 g/cm³); Self-separable plastic and cardboard sleeves under mechanical pressure (sorting test mandatory)	Sleeves in PO (with density < 1 g/cm³); Sleeves in PET, PETG, PET-C, PLA, PS (all with density >1 g/cm³); Cardboard sleeves without fiberloss (sorting test mandatory)	Sleeves that hinder the recognition of the PE; Sleeves in non PO-materials with density < 1 g/cm³; Cardboard sleeves with fibreloss during recycling process; Aluminium; Metallised sleeves; Heavily inked sleeves; PVC
	Inks	Non-bleeding inks compliant with EuPIA Exclusion Policy		Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy; PVC binders
	Direct Printing	Laser marked; Direct printing (inks + lacquer) representing < 1 wt% of the total packaging (except dark colours)	Any other direct printing; Cold transfer and hot stamping technologies that does not hinder the recognition of the underlaying PE-polymer	
	Other Components (and decorative technologies)	HDPE, LDPE, LLDPE, MDPE	PP PET; PETG; PS; PLA all with density >1 g/cm³; Electroplating on attachments (with density > 1 g/cm³)	Aluminium; PVC; Glass components; Foams with density < 1 g/cm³; Electroplating on attachments (with density < 1 g/cm³)

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