

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 underlying PP-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 PP:

- Size of non-PP detectable surfaces on containers > 500 ml: < 70% coverage
- Size of non-PP detectable surfaces on containers < 500 ml: < 50% coverage

Material:

- PET-bottles
- PET-trays
- PP rigids Coloured
- PP flexibles
- PE rigids
- PE flexibles
- PS
- Paper & cardboard
- Beverage cartons
- Glass
- Steel
- Aluminium



	Class A-B	Class B-C	Non-recyclable	
	Full compatibility for reprocessing	Limited compatibility for reprocessing	Low (or no) compatibility for reprocessing	
Main body	Main Material*	PP	PE ≤ 10%	
	Material composition	A when PP content is > 95%; B when PP content is > 90% and all packaging features are FULLY compatible with recycling	C when PP content is > 70% and all packaging features are FULLY compatible with recycling	Multilayers with PLA; PVC; PS; PET; PETG; PE > 10%
	Colours	All colours	Black inner layer and dark colours (NIR-detectable)	D when PP content is > 50%; E when PP content is > 30%; F when PP content is <30%
	Size		Items compacted < 5 cm	Non NIR detectable colours
	Colours	All colours	Black inner layer and dark colours (NIR-detectable)	Items compacted < 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%	Non NIR detectable colours
	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	D if the index is < 20%; E < if the index is 25%; F if the index is > 25%
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	EVOH > 1% with different tie layers; PA; PVDC; Aluminium	
Attachments	Closure Systems	PP	HDPE; LDPE; LLDPE; MDPE; PET; PETG; PLA; PS (all with a density > 1 g/cm ³); Removable aluminium lidding	Additives changing the material density > 1 g/cm ³ Flame-retardant additives, plasticizers Bio-/oxo-/photodegradable additives
	Liners, Seals and Valves	PP; TPO < 1wt%; TPS < 1wt%	HDPE; LDPE; LLDPE; MDPE; TPE-PE; PET, PETG, PS, PLA (all with a density >1g/cm ³); Removable silicon with a density > 1 g/cm ³ ; PO foamed ≤ 1%	Non-PO and/or foams with density <1g/cm ³ ; Aluminium; Metal; PVC
	Other Components	PP	PE with density <1 g/cm ³ ; PET; PETG; PS; PLA all with density >1 g/cm ³ ; Electroplating on attachments (with density >1 g/cm ³)	Non-PO and/or foams with density <1g/cm ³ ; Any other TPE Aluminium; Metal; Foiled paper; PVC
Decoration**	Inks	Non-bleeding inks compliant with EuPIA Exclusion Policy		Aluminium; PVC; Glass components; Non-PO and /or foams with density < 1 g/cm ³
	Sleeves	Sleeves in PO (all with density < 1 g/cm ³), Self-separable plastic and cardboard sleeves under mechanical stress (sorting test mandatory)	Sleeves in PE (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)	Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy; PVC binders
	Labels	Labels in PP (all with density < 1 g/cm ³) In-Mould-Labels in PP printed with < 1 wt% of the total packaging (except dark colours and bleeding inks)	Labels in PE, PO (with density < 1 g/cm ³); Labels in PET, PETG, PLA, PS (all with density > 1 g/cm ³); Labels in Paper without fibreless; PO-foamed labels Any other In-Mould-Labels in PP (except bleeding inks)	Sleeves that hinder the recognition of the PP; Sleeves in non PO-materials with density < 1 g/cm ³ ; Cardboard sleeves with fibreless during recycling process; Aluminium; Metallised Sleeves; PVC; Heavily inked sleeves;
	Adhesives for labels	Water soluble or water releasable adhesive (@ less than 40°C)	Non-water soluble or non-releasable adhesive approved by RecyClass in combination with filmic PO labels	Labels that hinder the recognition of the PP; Labels in non PO-materials with density < 1 g/cm ³ ; Paper labels with fibreless during recycling process Aluminium; Metallised labels; PVC Cardboard or paper in In-Mould-Labels;
	Direct Printing	Laser marked; Production or best-before date, Direct printing (inks + lacquer) representing <1wt% 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 underlying PP-polymer	Non water soluble or water releasable adhesives
	Other Decorative Technologies		Electroplating on attachments (with density > 1 g/cm ³)	Electroplating on attachments (with density <1 g/cm ³)