## RecyClass

## **Coloured HDPE Containers and Tubes**

	YES - FULL COMPATIBILITY	CONDITIONAL - LIMITED COMPATIBILITY	NO - LOW COMPATIBILITY
MATERIAL COMPOSITION (TOTAL AMOUNT OF PE & PP IN THE PACKAGING)	A >= 95%, B >= 90% and all packaging features are FULLY compatible with recycling	C >= 70% and all packaging features are FULLY compatible with recycling	D >= 50%, E >= 30% and all packaging features are FULLY compatible with recycling
DESCRIPTION (TEST PROTOCOL)	Materials that passed the testing protocols with no negative impact OR	Materials that passed the testing protocols if certain conditions are met	Materials that failed the testing protocols
	materials that have not been tested (yet), but are known to be acceptable in PE recycling	materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	materials that have not been tested (yet), but pose a high risk of interfering with PE recycling
DESCRIPTION (METHODOLOGY)	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from A to B or from B to C	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from C to D	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from D to E or from E to F
MATERIALS*	HDPE; Multilayer PE with HDPE prevalence (LLDPE, LDPE, MDPE) TPO <= 10 % (full olefinic or aliphatic structure)	<u>PP &lt;= 10%</u>	Multilayers HDPE with PLA, PVC, PS, PET, PETG; <u>10% cPPc=30% (c2 classes);</u> <u>PP &gt; 30% (c3 classes);</u> 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 (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%
	EVOH <= 6.0%wt + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layers ratio <= 2; Enkase (fluorination), In-mould fluorination; SIOx Plasma Coating	$\rm EVOH > 6.0\%wt + \rm PE-g-MAH \ tie \ layers \ with \ MAH > 0.1\%wt \ and \ EVOH \ e \ 2; \ EVOH \ <= 1\%$ 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 (CaCO3, talc) not increasing density more than 0,97 g/cm <sup>3</sup>	Additives changing the material density $> 1\ g/cm^3;$ Flame-retardant additives, plasticizers; Bio-/oxo-/photodegradable additives
LAMINATING ADHESIVES	Polyurethanes and water-based acrylics <3%; To be tested if in combination with a barrier material	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 specially developed for high thermal applications above boiling and/or for high chemical resistance (to be tested); Any other laminating adhesives (Epoxy, etc.)
	HDPE; LDPE; LLDPE; MDPE	PP; PET; PETG; PLA; PS (all with a density > 1 g/cm <sup>3</sup> ); Removable aluminium lidding	Non-PO and/or foams with density < 1 g/cm³; Aluminium; Metal; PVC
LINERS, SEALS AND VALVES	HDPE; LDPE; LLDPE; MDPE; TPO; TPS <= 1%	PP: TPS; PET, PETG, PLA, PS (all with a density > 1 g/cm³); Removable silicon with a density > 1 g/cm³; <u>PO loamed &lt;= 1%</u>	Non-PO and/or foams with density < 1 g/cm²; Any other TPE; Aluminium; Metal; Foiled paper; PVC
OTHER COMPONENTS	HDPE, LDPE, LLDPE, MDPE	PP: PET; PETG; PLA; PS all with density > 1 g/cm <sup>3</sup>	Aluminium; PVC; Glass components; Foams with density < 1 g/cm <sup>3</sup>
INKS	Non-bleeding inks compliant with EuPIA Exclusion Policy		Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy; PVC binders
LABELS MATERIALS (PSL, WET-GLUE LABELS, WRAP-AROUND LABELS, IML)	Labels in PE (all with density < 1 g/cm <sup>3</sup> ); 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; Acrylic emulsion; Hotmelt rubber	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/cm <sup>3</sup> ); Sleeves in PET, PETC, PET-C, PLA, PS (all with density >1 g/cm <sup>3</sup> ); Cardboard sleeves without fiberioss ( <u>sorting test</u> mandatory)	Sleeves that hinder the recognition of the PE; Sleeves in non PO-materials with density < 1 g/cm <sup>3</sup> ; Cardboard sleeves with fibreloss during recycling process; Aluminium; Metallised sleeves; Heavily inked sleeves; PVC
DIRECT PRINTING	Laser marked; Production or best-before date; Direct printing (inks + lacquer) representing < 1 wt% of the total packaging (except dark colours)	Any other direct printing: <u>Cold transfer and hot stamping technologies</u> that does not hinder the recognition of the underlaying PE-polymer	
OTHER DECORATIVE TECHNOLOGIES		Electroplating on attachments (with density > 1 g/cm <sup>3</sup> )	Electroplating on attachments (with density < 1 g/cm <sup>3</sup> )

RECYCLED CONTENT: No change in the recyclability assessment. A separate 'Recycled Plastics Traceability Certification' based on a Chain of Custody approach is available with RecyClass
\* Polymer resin can be either fossil-or bio-based, virgin or recycled. If different grades of the same polymer are present, weights should be cumulated
\*\* 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 surfaces on containers > 500 ml: < 70% coverage

- Size of non-PE surfaces on containers < 500 ml: < 50% coverage

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