# Natural and White HDPE Containers

The same design for recycling recommendations apply to natural and white plastic packaging, to preserve the high-value of these materials and to ensure the availability of both white and natural recycled plastic on the markets. **However, natural and white packaging should be sorted into two distinct streams and recycled separately.**

| | | FULL COMPATIBILITY | LIMITED COMPATIBILITY | NON-COMPATIBILITY |
|---|---|---|---|---|
| | MATERIAL COMPOSITION (TOTAL AMOUNT OF **PE** & **PP** IN THE PACKAGING) | A >= 95%, B >= 80% and all packaging features are FULLY compatible with recycling | C >= 70% and all packaging features are FULLY compatible with recycling | Non-recyclable < 70% and all packaging features are FULLY compatible with recycling |
| | DESCRIPTION (TEST PROTOCOL) | Materials that passed the testing protocols with no negative impact***<br>OR<br>materials that have not been tested (yet), but are known to be acceptable in PE recycling | Materials that passed the testing protocols if certain conditions are met***<br>OR<br>materials that have not been tested (yet), but pose a low risk of interfering with PE recycling | Materials that failed the testing protocols<br>OR<br>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 non-recyclable | Non-recyclable |
| PACKAGING | MATERIALS* | HDPE;<br>Multilayer PE with HDPE prevalence (LLDPE, LDPE, MDPE)<br>TPO <= 10 % (full olefinic or aliphatic structure)<br>TPS <= 5 % | PP;<br>5 % <TPS<= 10 % | Multilayers HDPE with PLA, PVC, PS, PET, PETG;<br>TPO (containing rubber, e.g. EPDM) |
| MAIN BODY | COLOURS | Natural (clear); White | Light colours | Black Inner layer; Black; Carbon Black; Other dark 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% | Index is >= 15% |
| | BARRIER | EVOH <= 6.0 % + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layers ratio <= 2; Fluorination technologies approved by RecyClass; SiOx Plasma Coating | EVOH > 6.0 % + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layers ratio <= 2; EVOH <= 1 % with any other tie layers | EVOH > 1 % with any other tie layers; PA; PVDC; Plasma Fluorination; Aluminium; Metallisation; PVOH |
| | ADDITIVES | Additives that are unavoidable in processing (stabilizers, antioxidants, lubricants, nucleating agents, peroxides) and density remains < 0,97 g/cm³ | Mineral fillers (CaCO3, talc) not increasing density more than 0,97 g/cm³ | Additives changing the material density > 1 g/cm³; Flame-retardant additives; plasticizers;<br>Bio-/oxo-/photodegradable additives |
| | LAMINATING ADHESIVES | Laminating adhesives approved as fully compatible by RecyClass; To be tested if in combination with other barrier material than EVOH:<br>Aliphatic polyurethanes < 2.5% | WB acrylics < 2.5%; Laminating adhesives approved as limited compatible by RecyClass; To be tested if in combination with other barrier material than EVOH | Aliphatic polyurethanes > 2.5 %; Aromatic polyurethanes & Water-based acrylics > 2.5 %; 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.) |
| ATTACHMENTS | COLOURS | Natural (clear); White | Light colours | Black Inner layer, Black, Carbon Black, Other dark colours |
| | CLOSURE SYSTEM | HDPE; LDPE; LLDPE; MDPE<br>PP <= 10 % | PP > 10 %:<br>PET; PETG; PLA; PS (all with a density > 1 g/cm³); 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;<br>Foamed PO; EVA | PP;<br>PET, PETG, PLA, PS (all with a density > 1 g/cm³); Removable silicon with a density > 1 g/cm³; | Non-PO with density < 1 g/cm³;<br>Any other TPE; Aluminium; Metal; Foiled paper; PVC |
| | OTHER COMPONENTS | HDPE, LDPE, LLDPE, MDPE | PP;<br>PET; PETG; PLA; PS all with density > 1 g/cm³ | Aluminium; PVC; Glass components;<br>Foams with density < 1 g/cm³ |
| DECORATION** | LABEL MATERIALS | PE | PP, other PO (with density < 1 g/cm³);<br>PET, PETG, PLA, PS (all with density > 1 g/cm³);<br>Paper without fibreloss;<br>PO-foamed | Non-releasable; Labels that hinder the recognition of the PE;<br>Non PO-materials with density < 1 g/cm³; Paper with fibreloss during recycling process; Aluminium;<br>Metallised labels; PVC |
| | ADHESIVES FOR LABELS | Releasable in the recycling process | | Non-releasable in the recycling process |
| | IN-MOULD-LABELS | Releasable in the recycling process | | Non-releasable in the recycling process |
| | SLEEVES | PE;<br>Self-separable plastic and cardboard sleeves under mechanical pressure (sorting test mandatory) | PO (with density < 1 g/cm³);<br>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;<br>Non PO-materials with density < 1 g/cm³;<br>Cardboard sleeves with fibreloss during recycling process; Aluminium; Metallised sleeves; PVC |
| | INKS | Retentive inks compliant with EuPIA Exclusion Policy:<br>Direct printing for production or expiry date | | Bleeding inks;<br>Inks non-compliant with EuPIA Exclusion Policy;<br>PVC co- and terpolymer binders; any other chlorinated binders;<br>Any other direct printing |
| | OTHER DECORATIVE TECHNOLOGIES | Laser marking for production or expiry date | Electroplating on attachments (with density > 1 g/cm³) | Electroplating on attachments (with density < 1 g/cm³) |

**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

*** Approved technologies can be found here

*Last update: July 2025*

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