

# Design For Recycling

## GUIDELINES for packaging

\* Nitrocellulose (NC) based inks impact on recyclability is under investigation by RecyClass.  
 \*\* Temporary Solution

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



|             |                               | Yes - Full compatibility  | Conditional - Limited compatibility   | No - Low (or no) compatibility   |
|-------------|-------------------------------|---|---|--|
| Main body   | Material                      | Oriented and non-oriented PP (including PP-plastomers)  | Multilayer PP/PE with PE ≤ 10%  | Any other polymer (ex. PET, PVC, etc.)   |
|             | Colours                       | Unpigmented; transparent  | Light colours; translucent colours  | Dark colours; black; carbon black  |
|             | Size                          | > A4 or > 50 x 50 mm once compacted   | < A4 format or between 20 x 20 and 50 x 50 mm once compacted (Sorting test)   | < 20 x 20 mm   |
|             | 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                       | SiOx and AlOx without additional coatings   | ≤ 5% EVOH (in polyolefin combination film);   | > 5% EVOH (in polyolefin combination film); Barrier layer PVC, PVDC, PA; <a href="#">AlOx coating with PVOH primer</a> ; any other barrier layer; <a href="#">metallisation</a> ; aluminium  |
|             | Additives                     | Additives that do not increase the density higher than 0,97 g/cm <sup>3</sup>   |   | PBT Voiding Agent; Bio-/oxo-/photodegradable additives; foaming agents used as expandant chemical agents; Additives that do increase the density higher than 0,97 g/cm <sup>3</sup> (CaCO <sub>3</sub> , talc, glass fibers, etc.)                           |
|             | Laminating adhesives          | <a href="#">Aliphatic polyurethanes ≤ 2.3 %</a> ;<br><a href="#">Laminating adhesives approved as fully compatible by RecyClass</a> ;<br>To be tested if in combination with a barrier material | <a href="#">Aliphatic polyurethanes between 2.3% and 4.5%</a> ;<br><a href="#">Laminating adhesives approved as limited compatible by RecyClass</a> ;<br>To be tested if in combination with a barrier material | <a href="#">Aliphatic polyurethanes &gt; 4.5%</a> ; Aromatic polyurethanes; To be tested: Acrylics; Laminating adhesives specially developed for high thermal applications above boiling and/or for high chemical resistance; Any other laminating adhesives |
| Attachments | Closure Systems               | PP (including PP-plastomers)  | PE  | Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm <sup>3</sup>  |
|             | Liners, Seals and Valves      | PP (including PP-plastomers)  | PE, removable aluminium liddings  | Metal, aluminium, PVC, PET, PETG, PS, PLA, foiled paper, non PO or foams with density < 1 g/cm <sup>3</sup>  |
|             | Other Attachments             | PP (including PP-plastomers)  | PE  | Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm <sup>3</sup>  |
| Decoration  | Inks*                         | Non-bleeding inks compliant with EuPIA Exclusion Policy; Printed production or expiry date  | Printing with coverage < 50 %**   | Bleeding inks; Inks non-compliant with EuPIA Exclusion Policy; PVC co- and terpolymer binders; Any other chlorinated binders; Printing covering > 50% **   |
|             | Facestock Label Material      | PP  | PE  | Metallized labels, any other; paper labels   |
|             | Adhesives for labels          | Water soluble or water-releasable at less than 40°C   |   | Adhesives non-soluble in water or non-releasable in water at less than 40°C  |
|             | Other Decorative Technologies | Laser marking for production or expiry date   | Laser marking with coverage < 50 %**  |  |