



RECYCLABLE PLASTIC BOTTLES

Recyclable plastic bottle = PET bottle

GENERAL GUIDELINES

- The specifications below are used to maximise the supply of PET material fit for clear B2B.
- All the requirements below have to be met, so that e.g. a paper label cannot be accepted unless it is fixed using water-soluble glue.
- Each PET bottle accepted in the PET recycling system must function in the reverse vending machines. Because of this, all the specifications must be met and in addition the bottles will be tested in their entirety by Palpa before the bottles are finally accepted into the system.
- Any other materials or components attached to the PET bottles must come off the bottles in a + 70°C wash.
- Any other materials or components attached to the PET bottles must have a density of <1, so that they can be separated from the PET material after grinding and washing.
- The dimensions and shape should differ significantly from those of the other recyclable bottles on the market (Ekopullo and A-pullo).
- Based on their recyclability, the materials of the PET recycling bottles are separated into four groups:
 1. Clear PET material, can be recycled as bottle-to-bottle and has the highest market price
 2. Coloured PET material, can be recycled for fibre application
 3. PET with mixed material, can be recycled but additional sorting and segregation required
 4. Other plastics and materials unsuitable for recycling

UPDATES
2007

Date/Item changed
5.12. PET with mixed material
15.10
1.3
9.7
6. Total height

FEEDBACK:
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1. Bottle

1.1 The material of the plastic bottle

	Clear PET material	Coloured PET material	PET with mixed material	Unsuitable for PET recycling	
- PET	■				
- PP				■	Polypropylene is not suitable for PET recycling
- PE				■	Polyethylene is not suitable for PET recycling
- PVC				■	PVC is not suitable for PET recycling nor for energy use

1.2 Colour of PET bottle

- see-through clear and light blue	■				There can be a max. of c. 5 % light blue material among the clear PET material
- blue		■			Coloured PET bottles are sorted as fibre-recycling
- green		■			Coloured PET bottles are sorted as fibre-recycling
- brown		■			Coloured PET bottles are sorted as fibre-recycling
- other colours		■			Coloured PET bottles are sorted as fibre-recycling

1.3 Coated PET bottles (*the bottles must be coloured in order not to be accidentally sorted as clear PET material)	Clear PET material	Coloured PET material	PET with mixed material	Unsuitable for PET recycling	
- PETG and PETN (max. content 5 %)	■				Requires a statement of recyclability from supplier
- plasma treated bottles (max. content 5 %)	■				Requires a statement of recyclability from supplier
- PEN bottles *				■	
- coated bottles (e.g. Glaskin etc.) *		■			Requires a statement of recyclability from supplier
- Scavengers, AA-blockers, UV stabile *		■			Requires a statement of recyclability from supplier
1.4 Coloured PET bottles					
- metallic colours				■	Colours containing metal pigments e.g. gold colour are not suitable for PET recycling
1.5 Multiple-layer bottles (the bottles must be coloured)					
- e.g. MXD6, CPTX312, PHAE etc.		■			Requires a statement of recyclability from supplier
- EVOH				■	
2. Materials for the cap					
- PP	■				Polypropylene caps can be separated from the PET material
- HDPE	■				HDPE caps can be separated from the PET material
- PET		■			Coloured PET caps or their printing colours tint the clear PET material
- metal (aluminium, steel)			■		Heatsealable aluminium/plastic foil included
- other packing materials				■	
3. Cap liners					
- no cap liners, see item 2	■				If the material of the cap is PP or HDPE
- EVA	■				EVA can be separated from the PET material
- PE	■				PE can be separated from the PET material
- PVC				■	PVC cannot be separated from the PET material
- liners of other materials				■	

4. Label and label glue

4.1 Glue labels

4.1.1 Material of the label

	Clear PET material	Coloured PET material	PET with mixed material	Unsuitable for PET recycling	
- paper	■				Paper labels can be separated from the PET material
- OPP	■				OPP labels can be separated from the PET material
- PE	■				PE labels can be separated from the PET material
- PET		■			Coloured PET labels tints the clear PET material
- PS				■	PS labels cannot be separated during the washing and recycling process
- PVC				■	PVC labels cannot be separated during the washing and recycling process
- other label materials				■	

4.1.2 Label glue

(for +70°C wash)

- water-soluble	■				Water-soluble glues dissolve in the wash
- recyclable HotMelt	■				Recyclable HotMelt glue dissolves in the wash
- other label glue				■	Other types of glue are not suitable for PET recycling

4.2 Adhesive labels for PET bottles

- if they come off in +70°C wash	■				Both label and glue have to come off!
- if they do not come off in +70°C wash			■		Most adhesive labels do not come off in a + 70°C wash!

4.3 Sleever label

- PE	■				Polyethylene labels can be separated from the PET material
- OPP	■				Polypropylene labels can be separated from the PET material
- PET		■			Coloured PET labels tints the clear PET material
- PVC				■	PVC labels cannot be separated from the PET material
- other materials				■	
- sleever label covers > 40% of bottle surface		■			

4.4 Printing ink of label

- printing ink	■				Heavy metal or fluorescent materials are not allowed
- metallic and foil labels			■		Metallic or foil labels must not enter the recycling process

Clear PET material	Coloured PET material	PET with mixed material	Unsuitable for PET recycling
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5. Other components of the PET bottle

	Clear PET material	Coloured PET material	PET with mixed material	Unsuitable for PET recycling	
5.1 Base cup (HDPE, PP)				■	Attached using a glue that does not come off in the wash
5.2 Built in handles (HDPE, PP)				■	Obstruct the functioning of the reverse vending machines
5.3 Multi pack				■	Obstruct the functioning of the reverse vending machines
5.4 Burglar alarm sticker				■	The antennae of the stickers contain metal
5.5 RFID sticker (contains metal)				■	The antennae of the stickers contain metal
5.6 Campaign and price tags	■				If they come off in the + 70°C wash!

6. Dimensions and strength of PET bottles

- outer diameter	50-120 mm				The opening of the reverse vending machine restricts the size
- total height (including top)	130-360 mm (380 mm starting year 2010)				The functions of the reverse vending machine restricts the size
- strength of bottle	Will be defined separately				

7. Shape of cross-section

(applicable in case the PET bottle revolves in the reverse vending machine)

- round	■	■			
- round with long neck				■	Approval on a case-by-case basis
- oval				■	Approval on a case-by-case basis
- flat (e.g. hip flask)			■		Approval on a case-by-case basis
- square and rectangular				■	Approval on a case-by-case basis
- other shape				■	Approval on a case-by-case basis
- shape of recycling bottles (Ekopullo, A-pullo)					The shape of the bottle will be examined in connection to registration

8. Markings in the PET bottles

(see complete instructions in
Marking the New Recyclable Plastic Bottles)

8.1 Preform and preform mould markings	Producer number + mould number	Recommended
8.2 Blower and blow mould markings	Producer number + mould number	Compulsory
8.3 Packaging markings	Batch numbers of preforms and bottles	Recommended
8.3.1 Raw material marking	PET number and triangular arrow marking	Compulsory
8.3.2 Deposit symbol and deposit value	Visual symbol as defined by PALPA marking instruction	Compulsory
8.3.3 Barcode, scale of magnification, ANSI grade	EAN-13 and EAN-8, scale of magnification 0,8, ANSI B UPC-codes A and E	Marked with EAN code only used in Finland
- barcode rotation	Code standing up (so called ladder position)	EAN code recommended
- barcode position	30–230 mm measured from bottom of the bottle	Compulsory
8.3.4 Safety markings	Until further notice safety markings are not required	Compulsory