

# SUSTAINABILITY GUIDE FOR PLASTIC TUBES



## DEVELOPMENT PROJECT

# SUPERTUBE

- Mono material:  
PE tube body, PE shoulder, PE closure
- Material reduction in the entire tube: 40% reduced wall thickness in the tube body, lightweight closure
- PCR material in the entire tube:  
100% PCR in the tube, 50% PCR in the cap
- HD printing and other printing techniques available



“Sustainability implemented consistently. And even in multiple dimensions at once.”  
„An innovative solution by LINHARDT that should become the norm.”

*Excerpt from the jury evaluation of the German Packaging Award (Company-internal translation)*

## DEVELOPMENT PROJECT TOP TUBE



- 🌿 73% lighter closure, 73% reduced carbon footprint of closure\*
- 🌿 Good recyclability thanks to Mono PE solution
- 🌿 Available with reduced wall thickness
- 🌿 Suitable for diameters 40 & 50 mm (30 & 35 mm planned)  
→ Ideal for product lines with different tube sizes

More information



\* Comparison between Top Tube closure 196 g with standard flip-top closure 73 g, carbon footprint incl. HDPE, injection moulding and material transport

## TUBES WITH REDUCED WALL THICKNESS

- Possible wall thickness reductions:  
350  $\mu\text{m}$  ( $\varnothing$  19 - 50 mm) → **30% material reduction**  
300  $\mu\text{m}$  ( $\varnothing$  19 - 30 mm) → **40% material reduction**  
270  $\mu\text{m}$  ( $\varnothing$  19 - 30 mm) upon individual technical feasibility study
- EVOH barrier possible
- Available as mono PE tube with PE closure
- PCR material possible
- HD printing and other printing techniques

🌱 30% or 40% material reduction in the tube body



## MONO-PE TUBES

- Mono material: PE in tuben body, shoulder and closure for **increased recyclability**  
*Development project: Mono PP tubes*
- EVOH barrier possible
- Reduced wall thickness possible
- PCR material possible
- HD printing and other printing techniques

🌱 Fully recyclable mono material





## PCR TUBES

- **High percentage of recycled plastic:**  
Up to 100% PCR
- PCR tubes possible in transparent, white, coloured, or with pearl effect
- EVOH barrier possible
- Available as mono PE tube with PE closure
- Reduced wall thickness possible
- HD printing and other printing techniques

- 🌱 Recycling cycle within Europe for reduced carbon footprint
- 🌱 Broad choice of post-consumer recycled plastic materials
- 🌱 Customized PCR rate configuration for different purposes



# LINHARDT SUSTAINABILITY GUIDE FOR PLASTIC TUBES

At LINHARDT, we create sustainable packaging solutions by following three main principles:

**REDUCE:** Reduction of the used material

**REPLACE:** Use of alternative, sustainable materials

**RECYCLE:** Use of recyclate or increase in recyclability

In order to make your specific plastic tube sustainable, we offer a wide range of configuration options:

## Material

- Use **mono material** for high recyclability: tube body, shoulder and closure in PE
- Use **PCR material** with variable PCR content up to 100% and various compliances (Food Grade, REACH, FDA\*)

## Structure

- Reduce **wall thickness** for less use of material
- Avoid or reduce **EVOH layer** for increased recyclability

## Decoration

- Avoid coloured tube body and shoulder
- Waive full-surface printing
- Use bright colours
- Choose HD printed mono-plastic tubes instead of flexo printed laminate multilayer tubes

\*Currently in qualification process



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