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TEGO® Res 1100

The new innovative co-binder for solventborne packaging inks

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Milan
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Only high quality recyclates can be re-used for high quality applications.

Excellent deinking is a prerequisite for true recycling.

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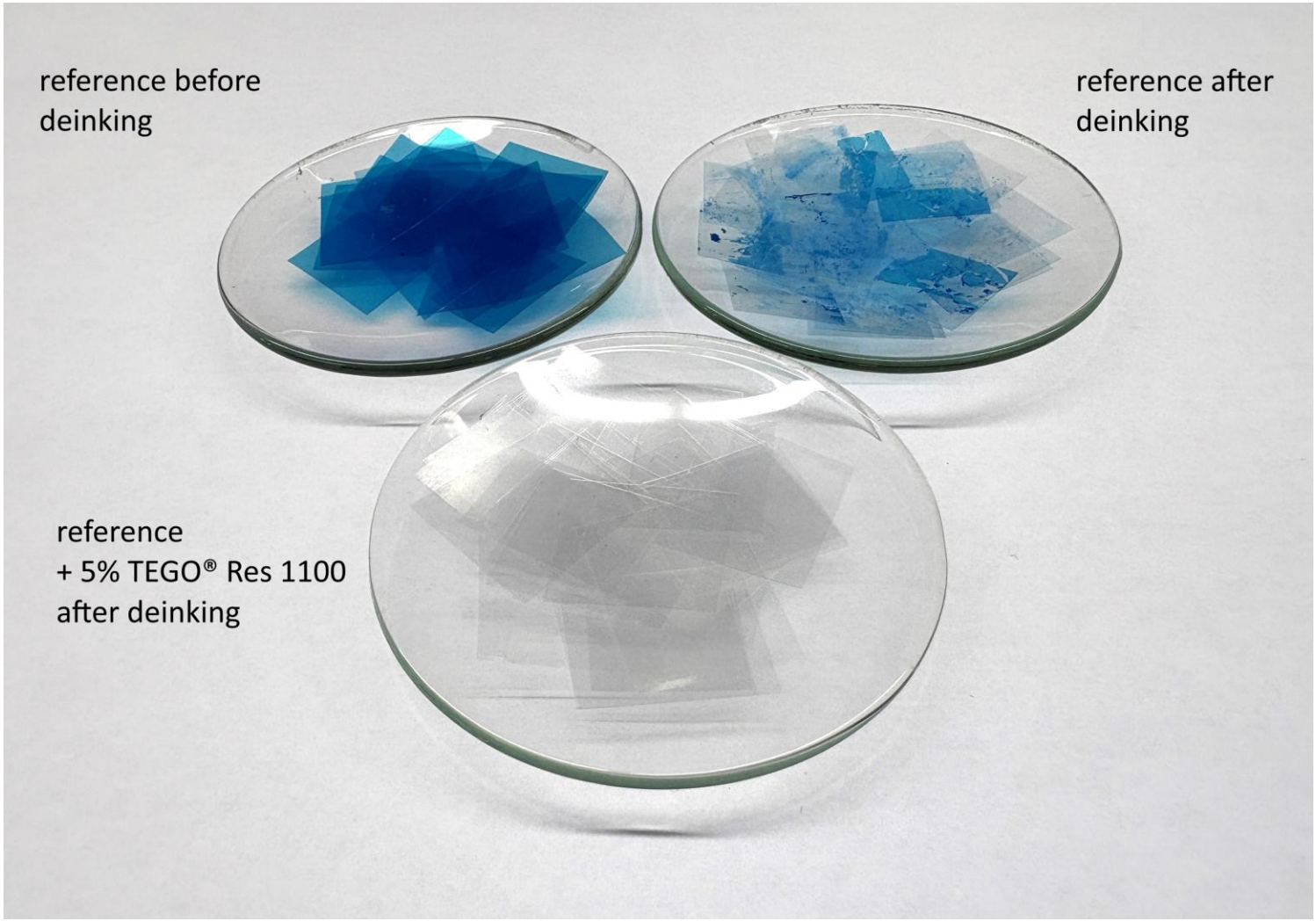
TEGO® Res 1100 enables fast and complete deinking



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TEGO® Res 1100

- Tailored methacrylate polymer
- Free-flowing, non-dusting powder
- Compliant with numerous food contact regulations, such as Swiss Ordinance, BfR, GIO, Mercosur, etc.

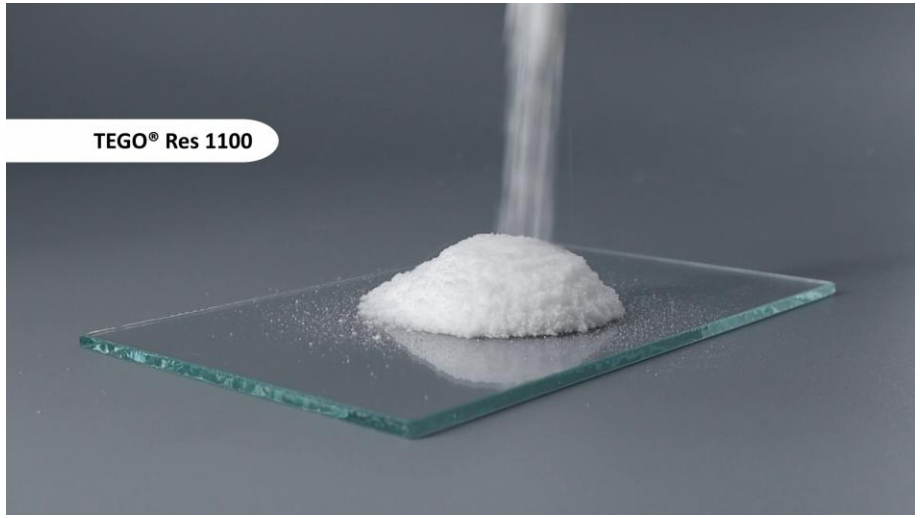
Safe

- Enables fast deinking of flexible packing under mild conditions
- No negative impact on ink properties

Effective

- Excellent deinking of solvent borne inks without process changes
- Ensures high quality recyclates
- Broad compatibility with solvents and polymers

Broadly usable



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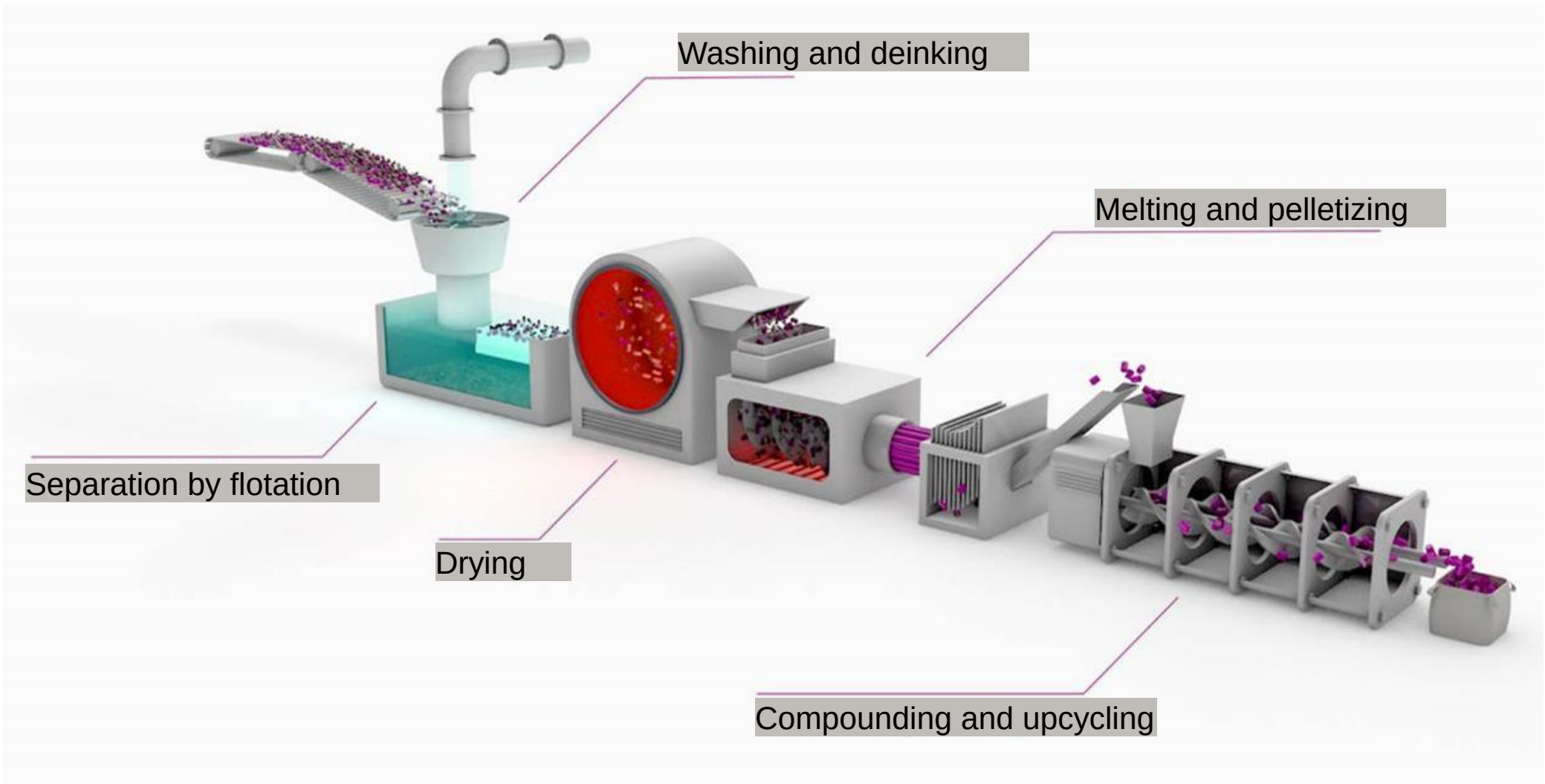
Simulating the deinking process



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Significantly faster deinking with TEGO® Res 1100

Test method:

12 µm ink applied on BoPP

24 h drying

0.6 g of printed BoPP is cut to pieces and added to 60 mL of a deinking solution (1% caustic soda + surfactant (CTAC))

Flakes are collected every 2 minutes

Optical judgement of flakes

Dosage of TEGO® Res 1100: 3 % on ink formula

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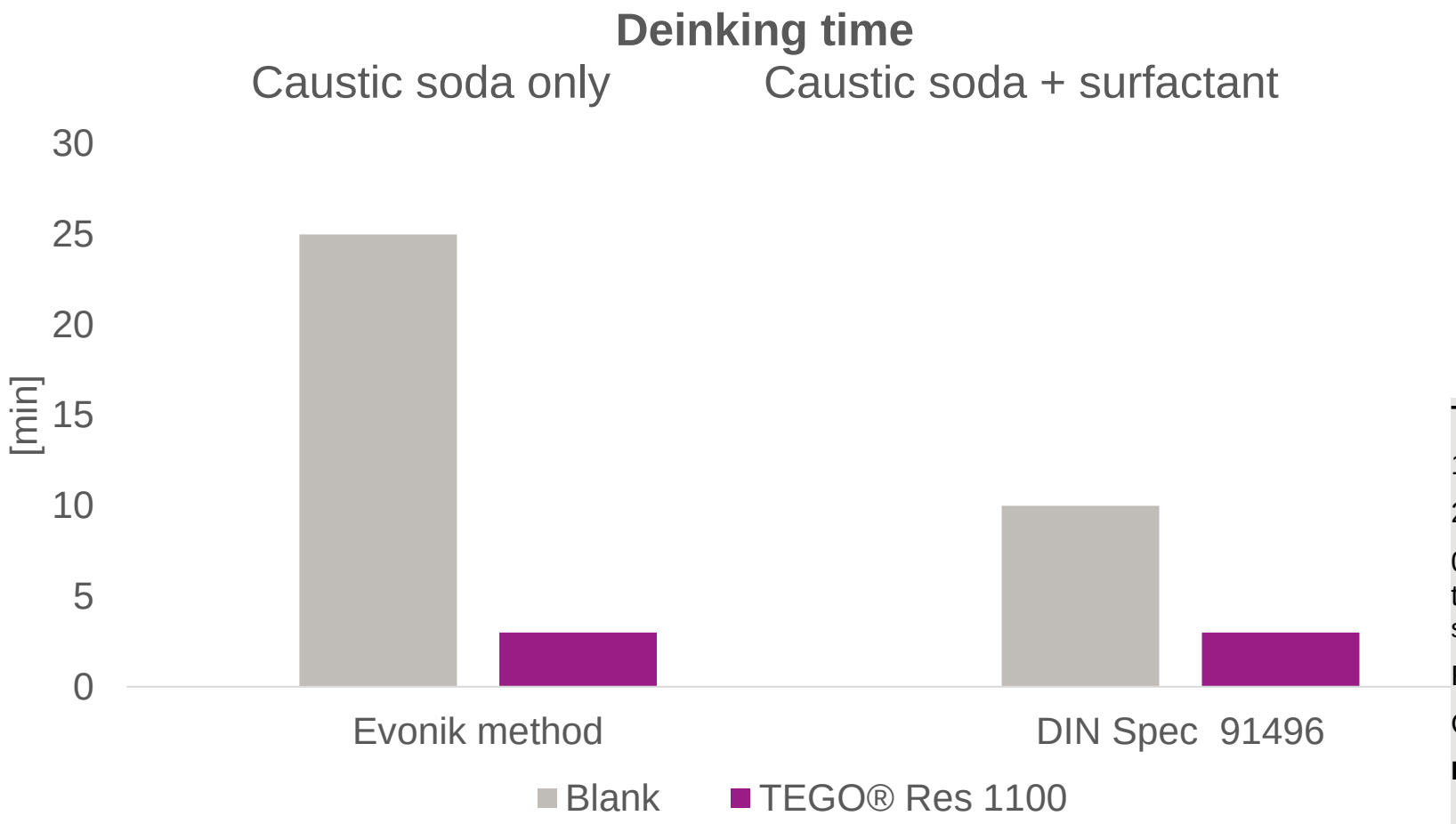
TEGO® Res 1100 increases deinking speed even when no surfactants are present in deinking bath (Evonik method)



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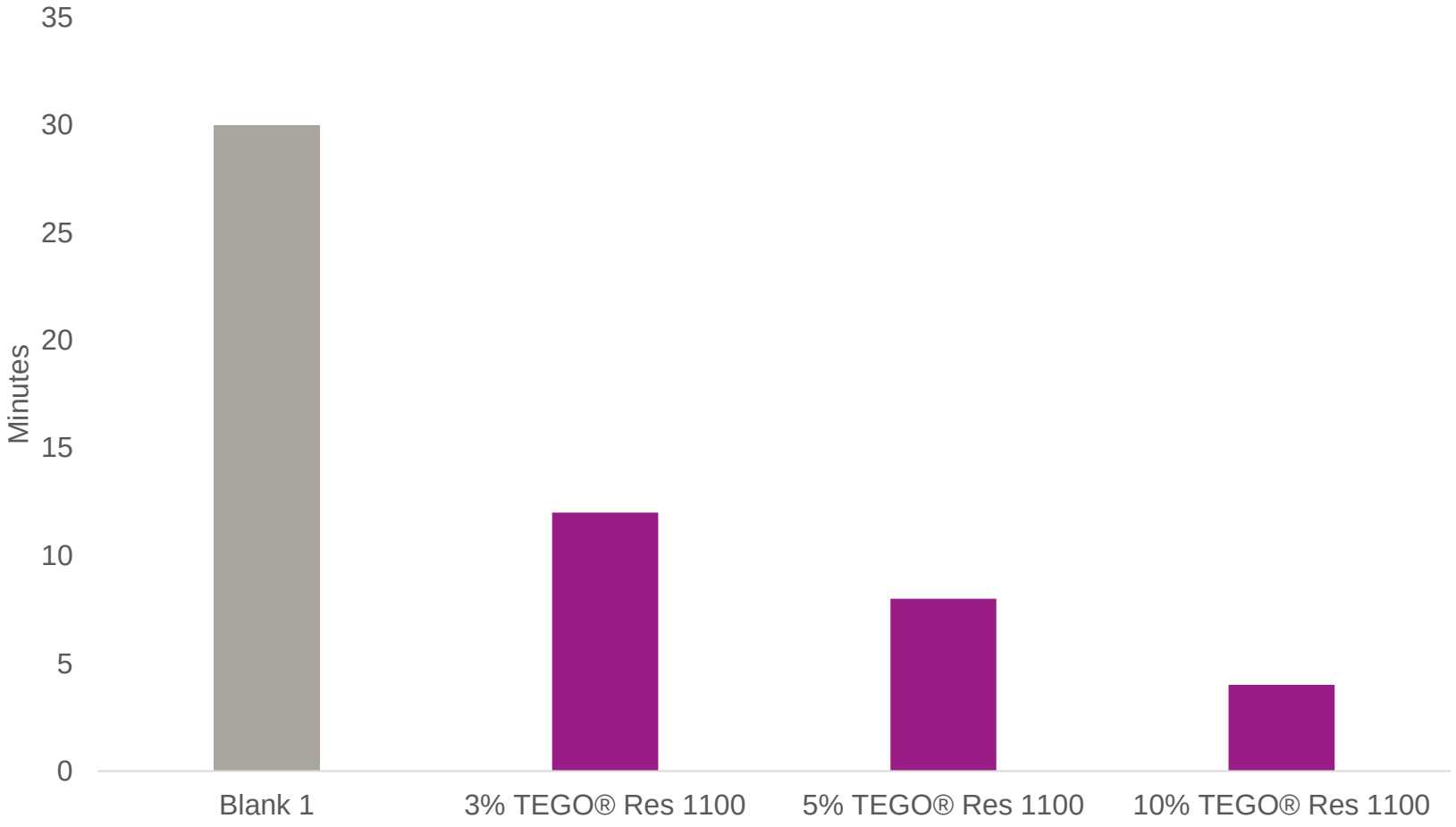
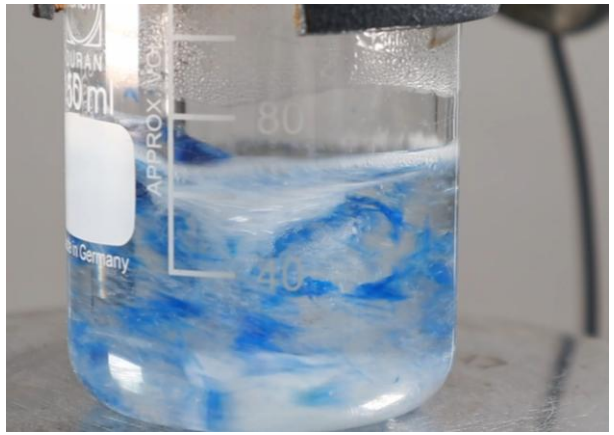
Increased concentration of TEGO® Res 1100 decreases deinking time





Blue NC / PU ink deinked after (min)
Tested by Evonik method: 2% NaOH, 40°C

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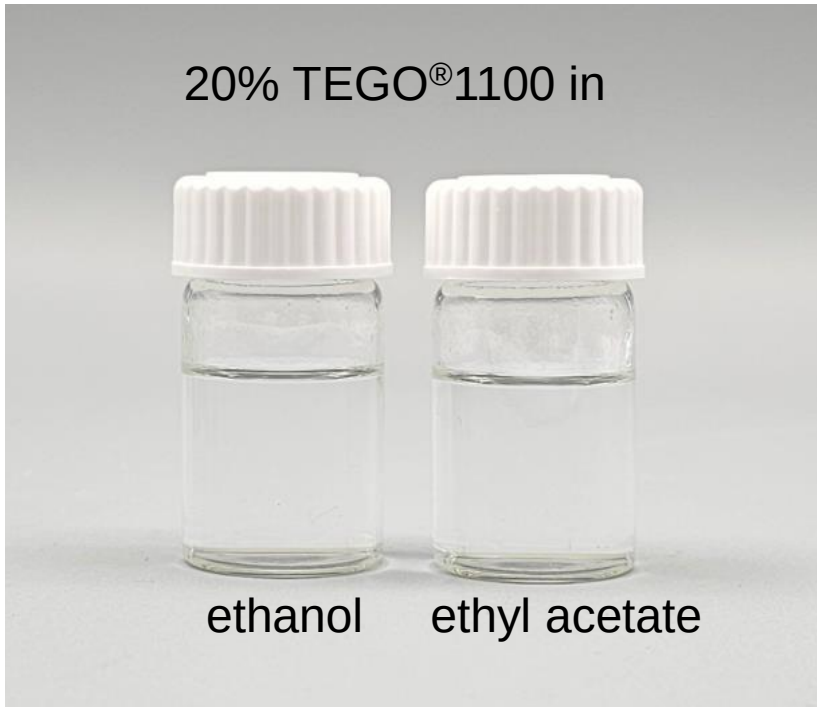
TEGO® Res 1100 is easy to incorporate and soluble in a variety of solvents

20 % in	Solution
Ethanol	Clear
Ethyl acetate	Clear
Ethoxy propanol	Clear

10 % in	Solution
NC solution	Clear
Aliphatic PU 1	Clear
Aliphatic PU 2	Clear



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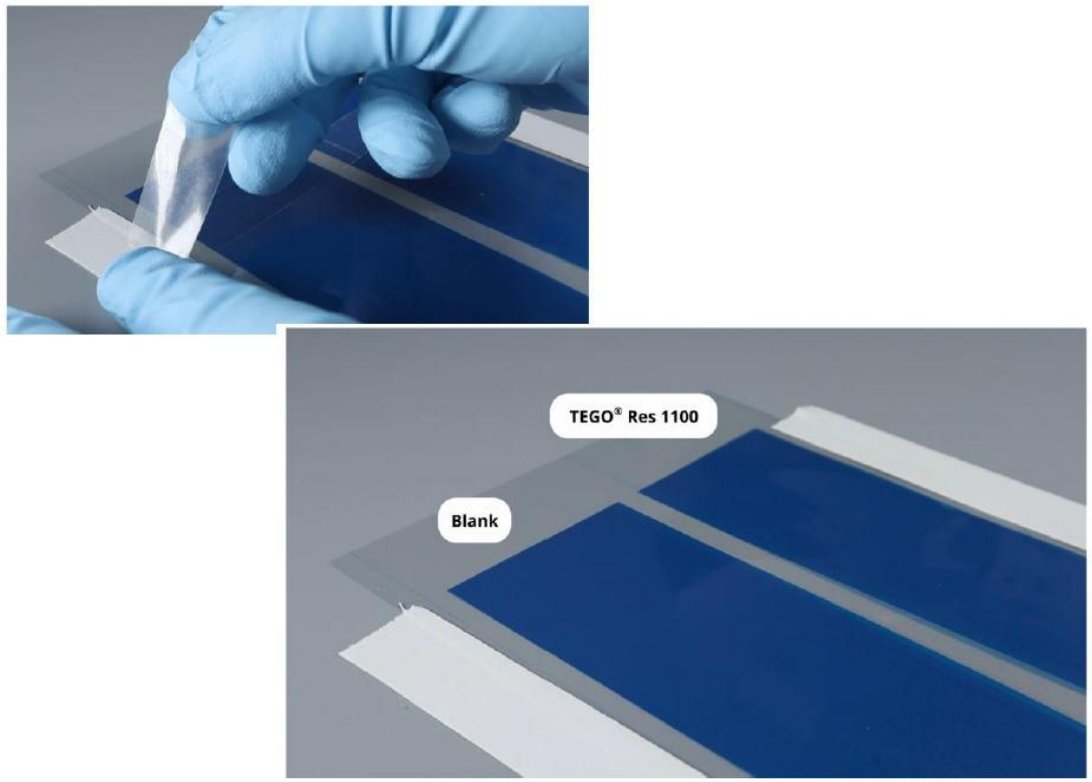
TEGO® Res 1100 maintains ink performances

Adhesion testing (Video)



Other tested properties in PU and NC inks

Properties	Results
Adhesion on various substrates	Unchanged
Heat seal resistance	Unchanged
Wet crinkle resistance	Unchanged
Viscosity	Unchanged
Color strength	Unchanged
Storage stability	Unchanged
Transparency	Unchanged

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TEGO® Res 1100 LCA

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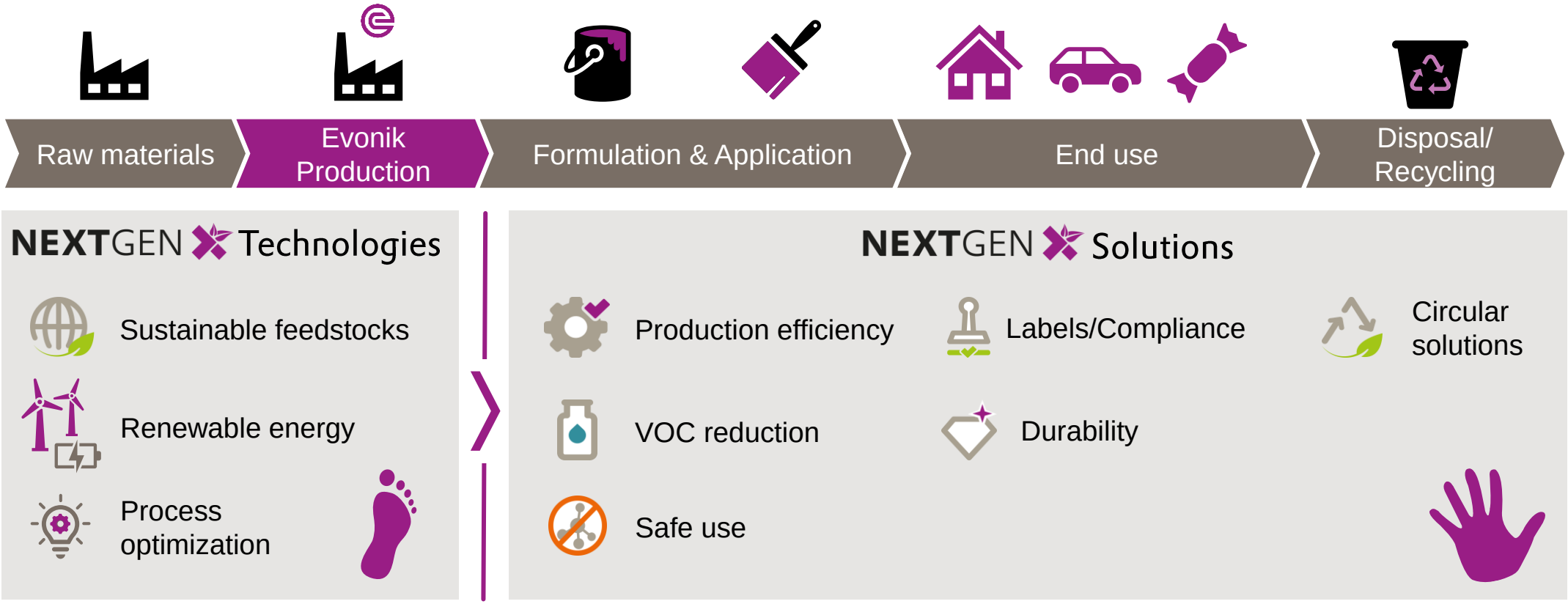
Coating Additives' sustainability approach

NEXTGEN Technologies and Solutions for safe and sustainable coating solutions



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Life cycle assessments are powerful tools to quantify the environmental impact of inks and coatings along their life cycle

Main factors	Raw material mining & processing	Utilities for processing	Utilities for formulation and application	Durability – need for maintenance or replacement	Utilities for recycling, landfill
System boundaries	Cradle-to-gate				
	Cradle-to-Application				
	Cradle-to-Grave				
ISO norm	▪ ISO 14040/44/67: Environmental management - Life Cycle Assessment ▪ TfS specification for product carbon footprint				

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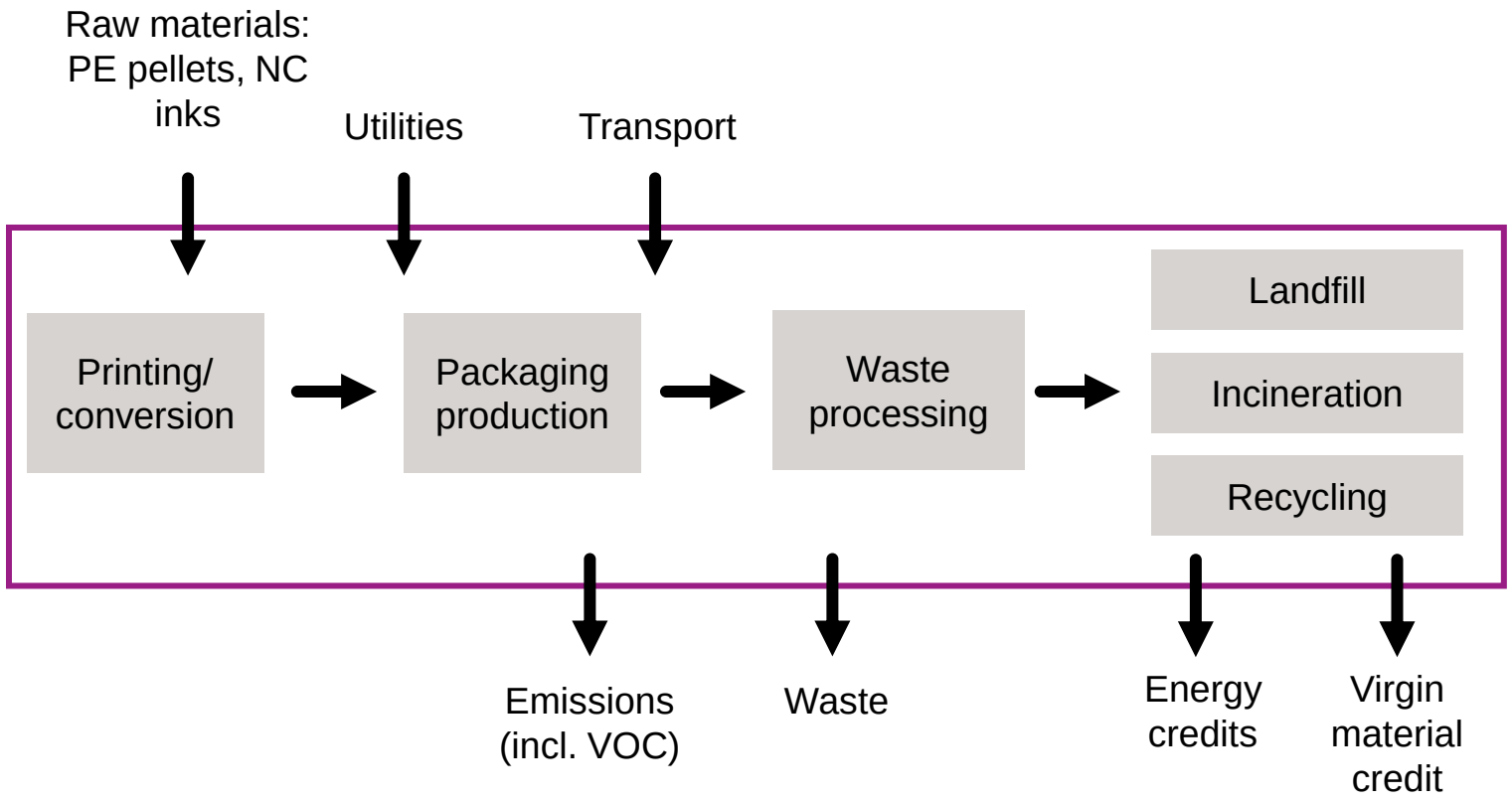
System boundaries – full LCA model



Base Scenario

- Manufacture of 1 kg of LDPE packaging + NC ink
- 70% collection rate of waste for waste processing (material credit)
- 10% recycling rate, remainder is landfilled or incinerated
- Inclusion of all raw materials + formulation/ application step

Deinking Scenario, 20% recycling

- Same assumptions as base scenario except:
- **20% recycling rate** due to better deinking

Deinking Scenario, 100% recycling

- Same assumptions as base scenario except:
- **100% recycling rate** due to better deinking

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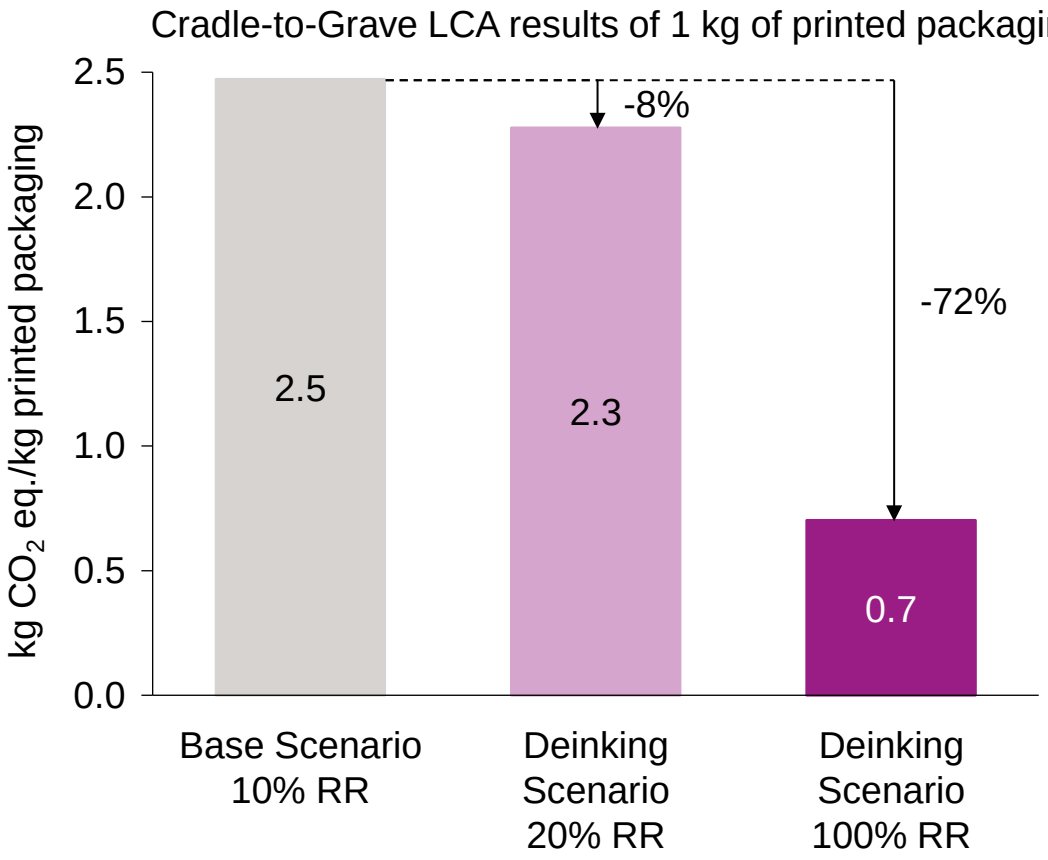
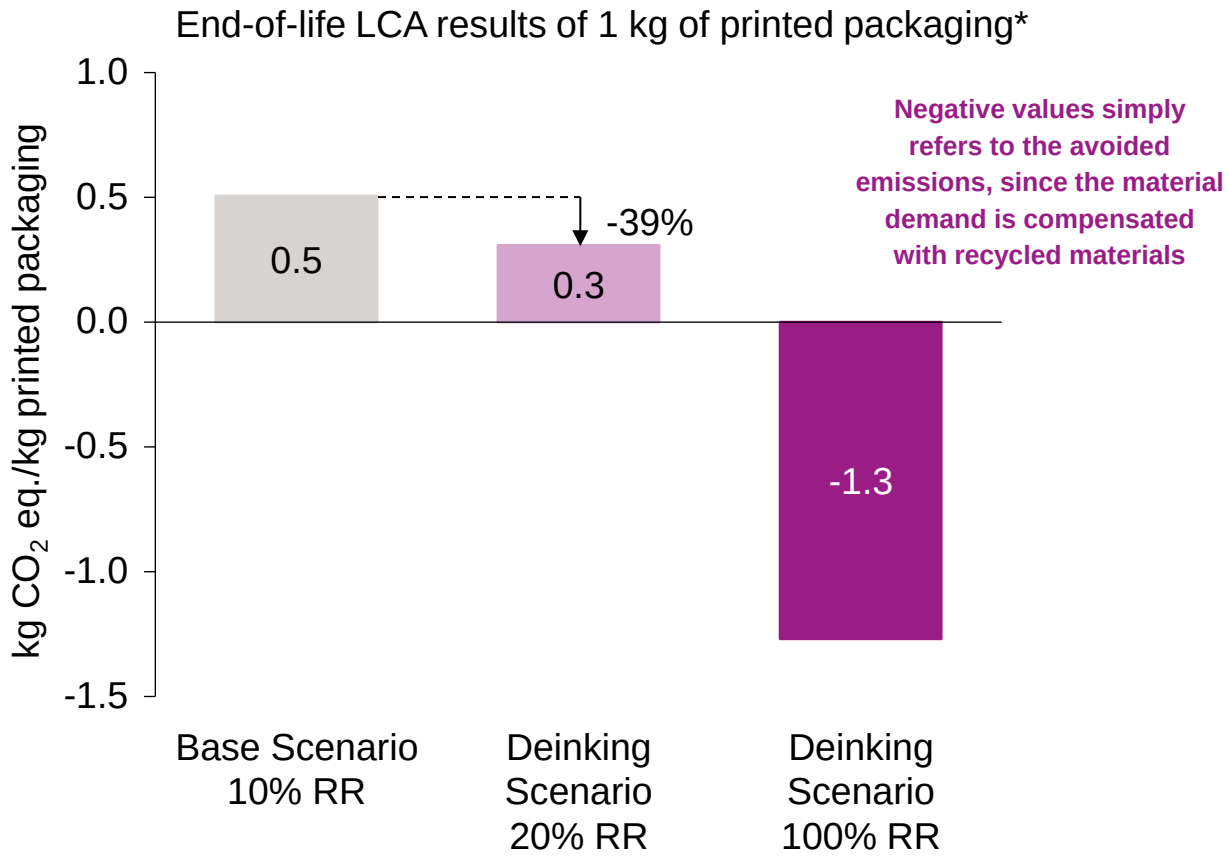
By using TEGO® Res 1100, it is possible to reduce the global warming potential of plastic packaging over the whole lifecycle significantly





*Assuming 70% materials (substitution) credit for the recycled material
RR = Recycling Rate

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SAFE EFFECTIVE BROADLY USABLE

TEGO® Res 1100 ensures fast and complete deinking of plastic packaging waste

- **while maintaining excellent ink properties**
- **without the need for process changes**

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Thank you
for your attention!

For further questions please feel free to contact me:
Susanne.ruppel@evonik.com

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