



boosting a circular economy

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Greiner Packaging: facts and figures

— Key figures 2020

692

690 (2019)

Revenue
(Mio. €)

88

68 (2019)

Operating Cash Flow before
changes in Working Capital
(Mio. €)

39

49 (2019)

Investments
(Mio. €)

4.897

5.001 (2019)

Employees



Processing

- » Extrusion blow molding mono-/ multilayer
- » Film extrusion
- » Plate thermoforming
- » Injection molding
- » Injection stretch blow molding
- » Thermoforming inline / offline
- » Injection molded silicone

Decorations

- » Print
- » Label
- » Hot stamping
- » IML (In-Mold Labeling)
- » K3® cardboard-plastic combination
- » Laser marking
- » Sleaving

Barriere

- » IBT (inert barrier technology)
= barrier layer via inert coating
- » MBT (multi barrier technology)
= barrier layer via polymer extrusion

product portfolio

TF
PP



TF
PS



IM
IML



IM
Sleeve



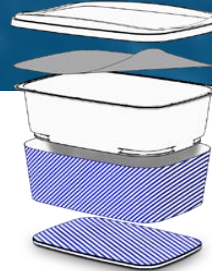
EBM



ISBM
Sleeve



K3®



ISBM
Label



K3®



Capsule



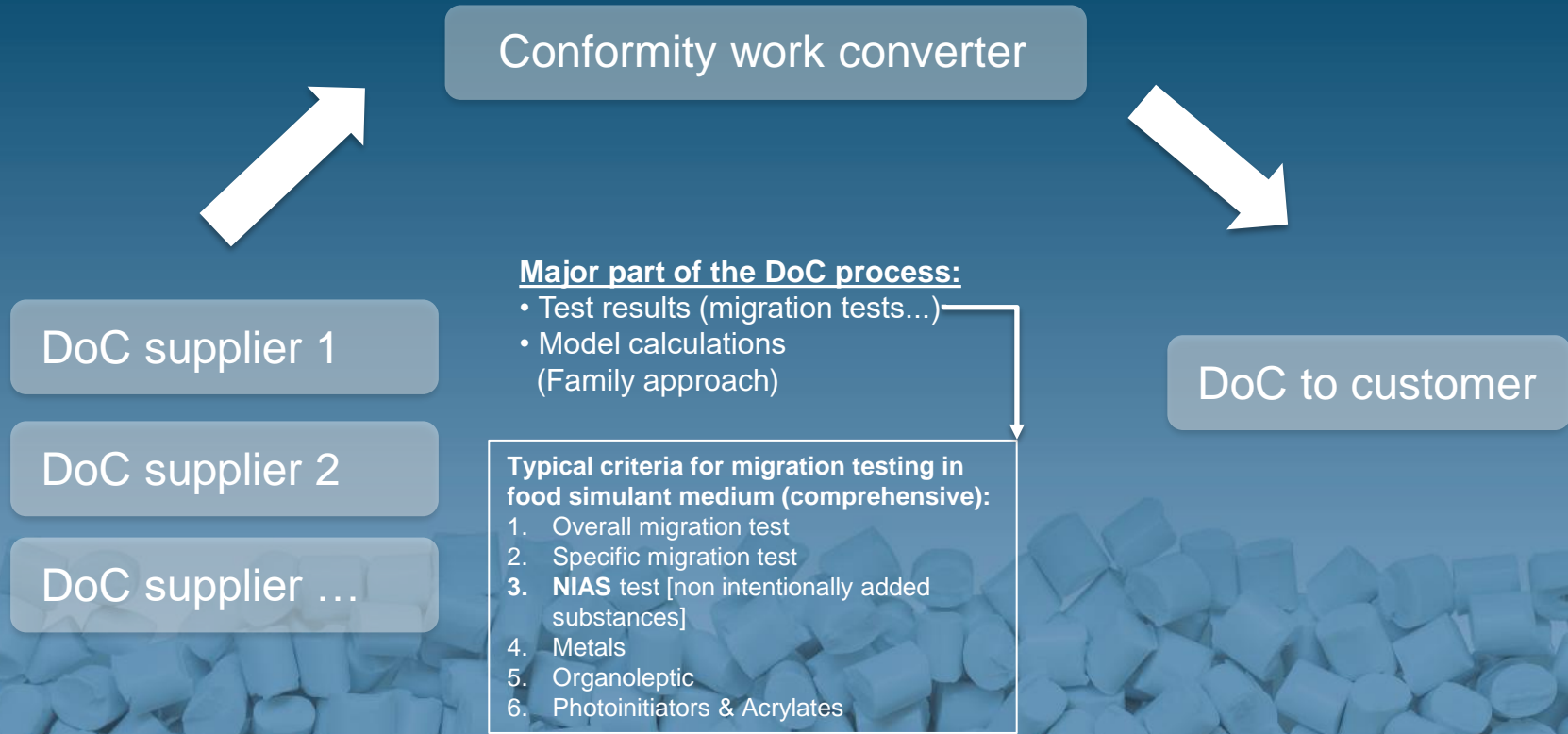
design for recycling



single use plastics directive (extract)

	Food Containers	Beverage Containers Incl. Beverage Bottles	Cups for Beverages	Cutlery & Straws
Legal Consequences	<ul style="list-style-type: none">» Absolute consumption reduction (2026)	<ul style="list-style-type: none">» Product design requirements (lid/cap attached) (07/2024)» Separate collection for recycling» Minimum content of recycled plastics in beverage bottles PET 25% (2025)*	<ul style="list-style-type: none">» Absolute consumption reduction (2026)» Marking requirements (07/2021)	<ul style="list-style-type: none">» Restrictions on placing on market (07/2021)
	<ul style="list-style-type: none">» Awareness raising measures» Extended producer responsibility (2023/2024)<ul style="list-style-type: none">» Covering cost of awareness raising, waste collection, litter clean-up and data gathering			

food-grade requirements – conformity work



recycling content - current challenges

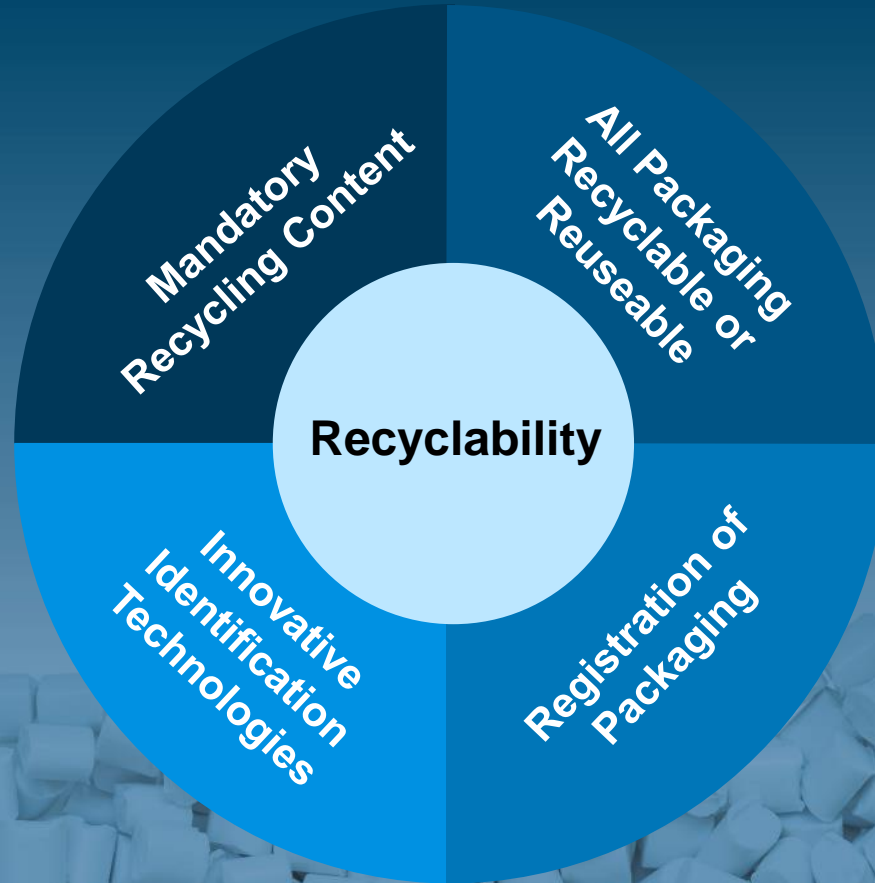
Non-food packaging

- Ensuring a constant material supply
- Ensuring quality standards
- Ensuring constant & reproducible quality
- Ensuring various different physical characteristics (e.g. mechanical properties,...)

Food packaging

- A positive EFSA opinion is required
- Use of r-PET only possible under strict regulations (only bottle stream commercially relevant)
- r-PS positive migration test possible but still no positive EFSA
- r-PO (mech.) cannot be used because no EFSA
- r-PO (chem.) – very limited quantities
- r-PO EFSA exception: (closed loop r-HDPE from milk bottles)

essential requirements - PPWD (extract)



recycling content

Shampoo bottles
up to 50% r-HDPE



Toilet rim
blocks
10% r-PP



Laundry detergent boxes
50% r-PP



Honey bottles
50% r-PET



Ketchup bottles
30% r-PET



Convenience
food tray
(gourmet)
25% r-PET



Blister packs &
trays up to
100% r-PET



recycling content & bio-based materials

1. Non-food packaging: r-PET, r-PO (e.g. r-PE or r-PP), r-PS
2. Food packaging: r-PET (dairy challenging), r-HDPE (with limitations: e.g. closed loop systems), rPS (promising trials but no positive EFSA)
3. Bio-based plastics made from biomass, cellulose, starch, sugar cane, organic waste, etc.
(Greiner preference: secondary feedstock that does not compete with the food chain)

r-PP

r-PS

r-PET



Summary - milestones

Securing our Future:

- recyclability as essential aspect of a circular economy
- innovative packaging but also innovative identification technology to simplify sorting

Climate opportunity:

- r-PS a fair chance on circularity
- recycling companies into recycling material-suppliers

Financing of Europeans future:

- eco-modulated gate fees rather than bans
- harmonized waste legislation that supports circularity e.g. „end of waste“

Essential questions:

Is the raw materials crisis a turbo for the use of recycled materials?

No, there is currently no increased use in our areas due to the raw materials crisis, legislation is still the limiting factor.

In which product groups does Greiner already successfully use recycled materials?

It is increasingly used in non-food packaging and cosmetic products.

What is the current situation regarding the competitiveness of secondary raw materials?

Prices are currently still significantly higher than new material, depending on the material group. Here, only taxation will lead to use on the market and also influence legislation.

Involved parties to increase the use of recycling material:

Disposer / Recycler

The recycled material requires additional processes and testing to be available for our applications.

Industry

Collaboration with upstream and downstream entities to design products that are more usable for a loop

Politics

- Limit values not to be further restricted
- Acceleration of the approval procedures
- Tax surcharges if virgin material is used instead of recycled (if permissible)
- Recyclable material cycles as pure as possible



**Let`s use together waste
as a valuable resource**