

SUSTAINABILITY & RECYCLING



Finat Technical Seminar
November 2022, Barcelona

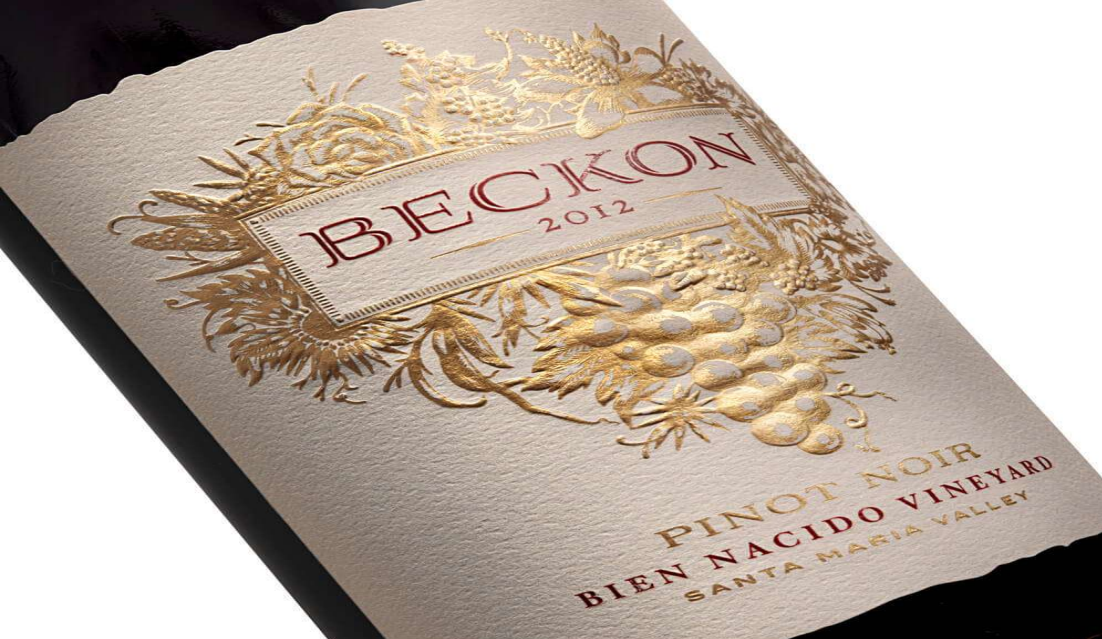


About KURZ



- family run business since 1899 (5th generation)
- global leader in thin-film technology
- supplies products for surface finishing, decoration, labelling and counterfeit protection
- over 5,000 employees
- global presence in more than 30 locations
- manufactures in Europe, Asia and the USA







-Product scope: Quality, Innovation,
Sustainability.

-Sustainable process, based on the 4 R's: **Reduce**
(SLIM Program), **Reuse, Recycle** (Recosys®), **Recover.**

01. Our **Mission** for sustainability

TRANSFER CARRIER

From waste material to **valuable raw material**.

- ✓ Extremely thin PET carrier material
- ✓ Free of hazardous substances

MANUFACTURING PROCES

Sustainable production as an **international benchmark**.

- ✓ Certified ingredients
- ✓ Solvent recovery
- ✓ Significant share of green energy supply
- ✓ German state of the art production care globally



BE A GREEN LEADER
with sustainable finishing in
print & packaging

END PRODUCT

Minimum material application for a **maximum optical effect**.

- ✓ No plastic on the packaging
- ✓ Aluminum layers 6,000x thinner than human hair
- ✓ Recyclable, deinkable and compostable

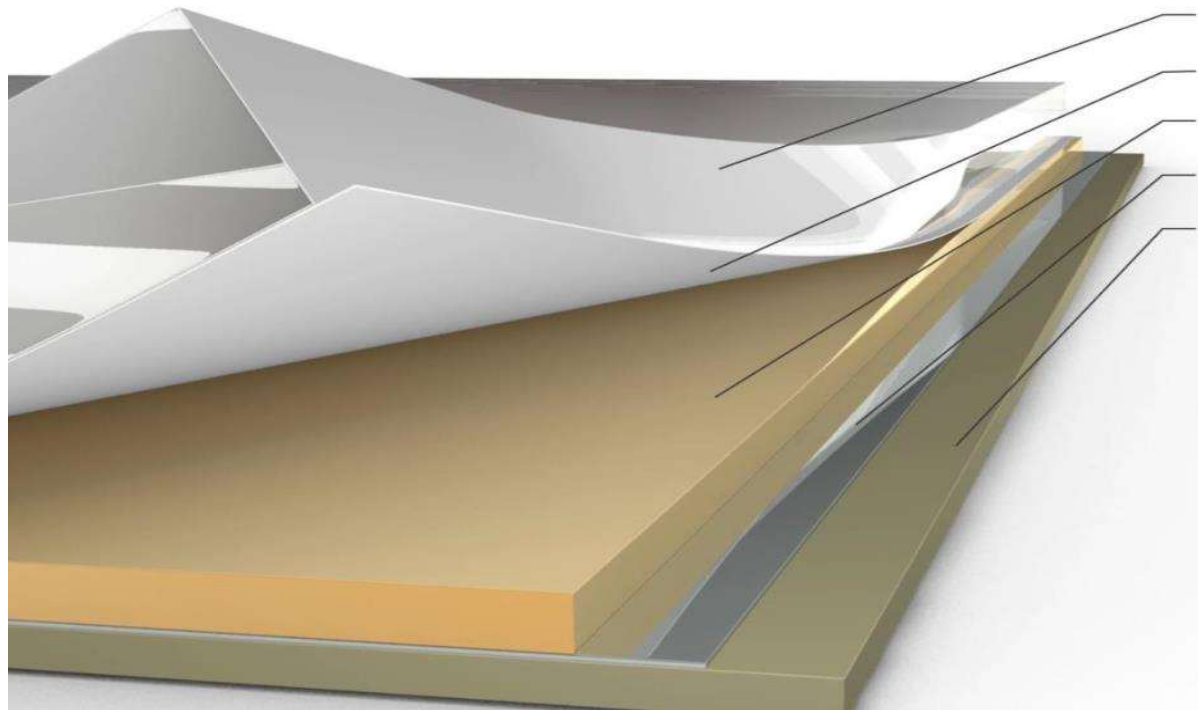
APPLICATION PROCESS

Building a bridge between **brilliantly finished packaging design and environmentally friendly processing**

- ✓ No water, no solvents
- ✓ Dry & energy-efficient
- ✓ PET released and mono-fractioned separated



Our **Layout** of KURZ transfer products



- carrier
- release layer
- protective layer
- metallization
- adhesive layer

SLIM Program

Reduce carrier from 12 μm to 10 μm and to 6 μm (-50%) for cold foil applications

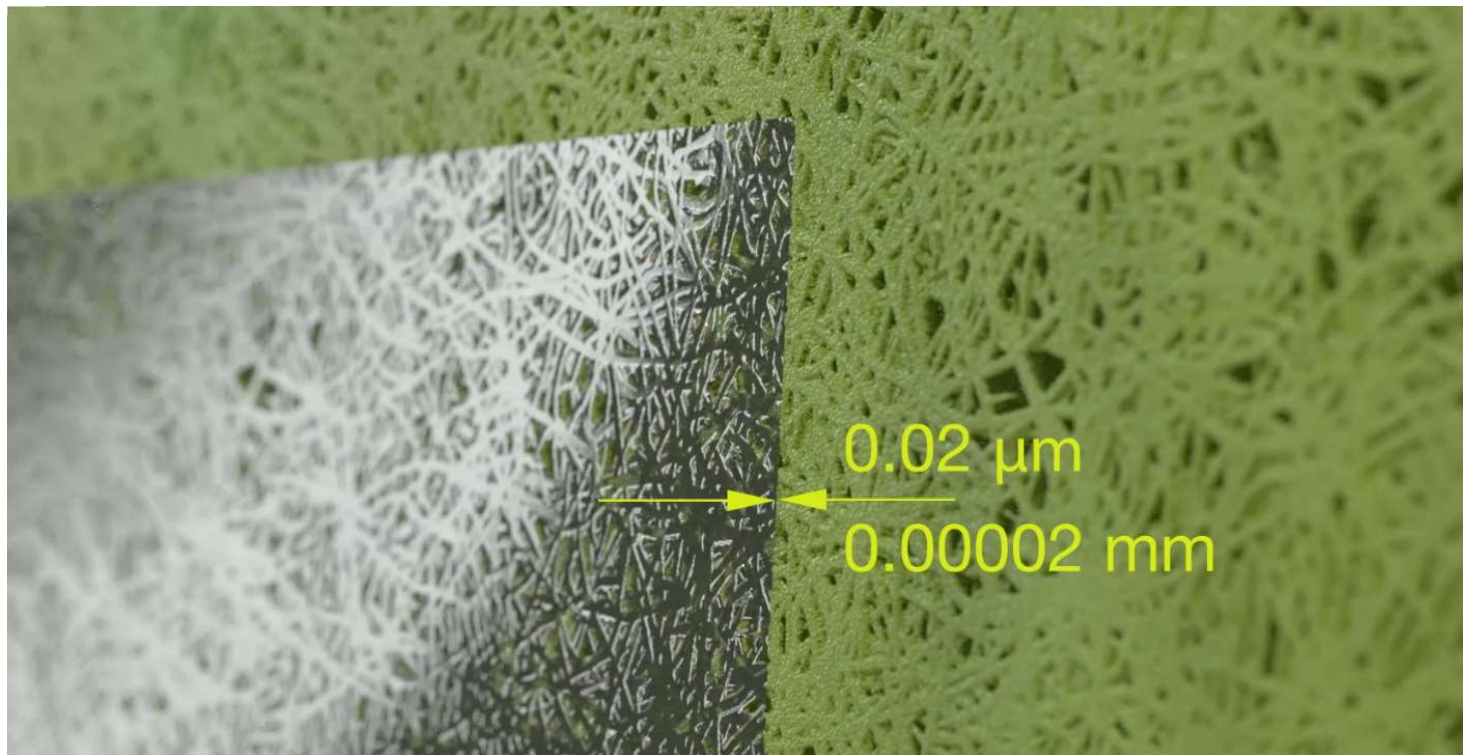
→ Total thickness of all layers
1.5 to 3 $\text{g}/\text{m}^2 \approx 1.5$ to 3 μm

01. No Plastic on the packaging

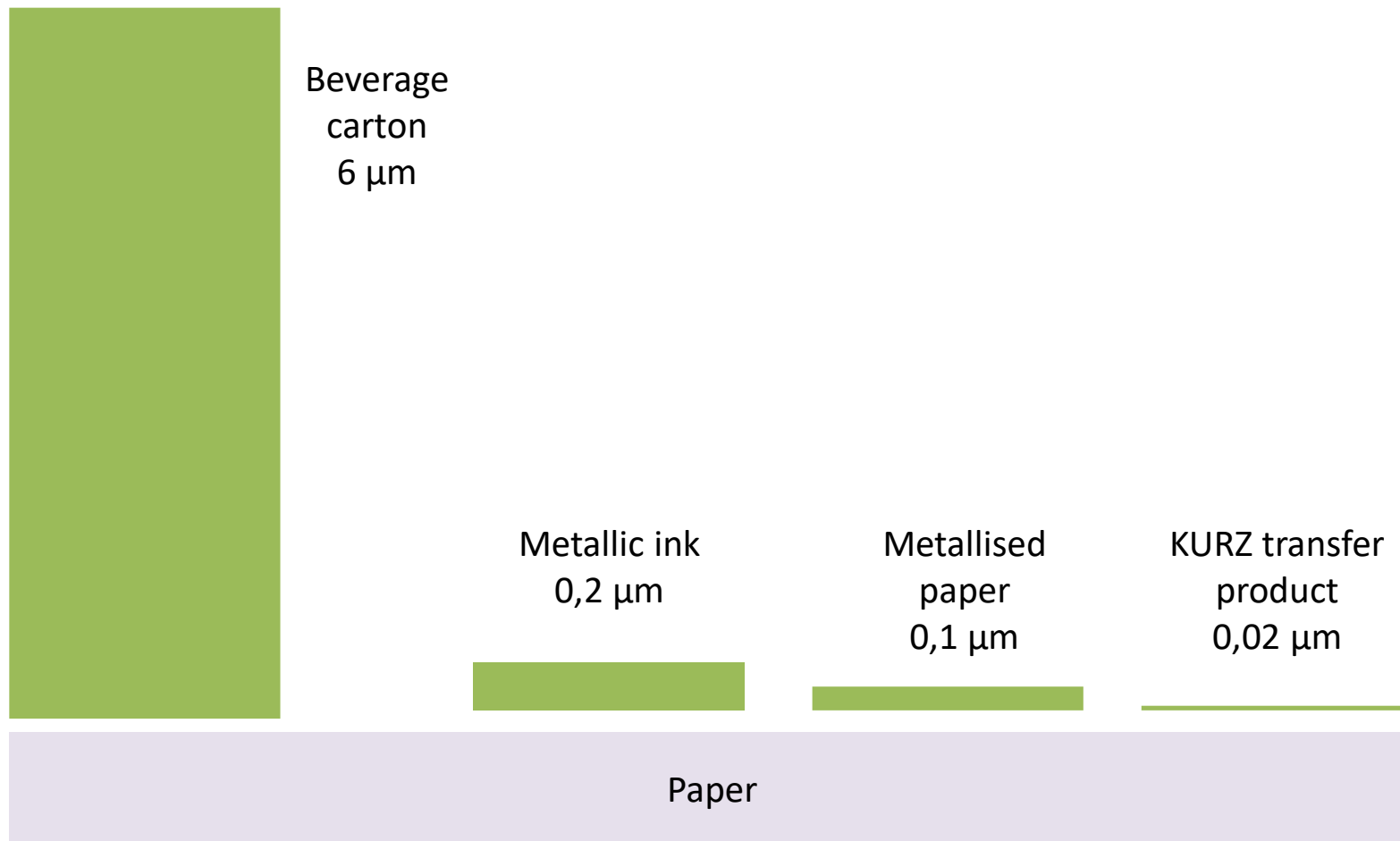


01.

Extremely thin transferred aluminium layers

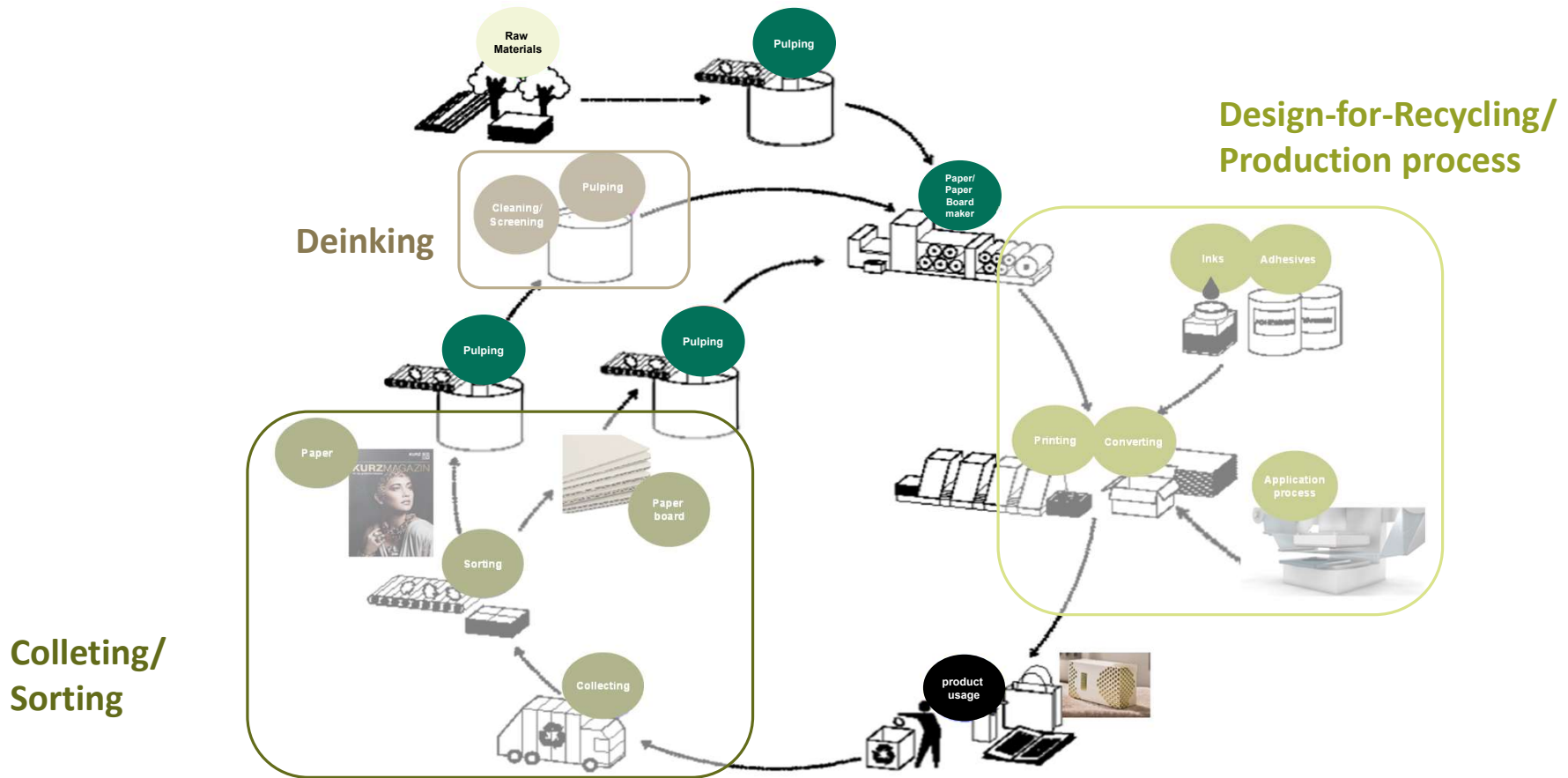


01. Aluminium **thickness** comparison





01. Is the end product recyclable ?





Sorting: Study by Rowe



- Company: Rowe Nürnberg
- Capacity 35to/h
- 3 main streams: paper, cardboard/paper and papers for deinking



Sorting: Study by Rowe





4evergreen design guidelines for fiber based materials.



Component	Sub-category	Fully compatible with standard recycling process	Conditionally compatible with standard recycling process	Not compatible with standard recycling process	Compatibility with recycling process unknown	Comment
Metallic components	decoration	hot and cold transfer		PP/PET metallised laminates, PET-metallised film		Designers should not cover the surface of fibre-based products fully with metallization, as this could cause issues regarding the detection as fibre product. The available test results are only applicable for certain types of packaging. For exact thresholds, testing is required!

Table 8. Design table of recommendations for typical decorative metallic elements



WRAP | Design tips for better recyclability of paper and board packaging

12

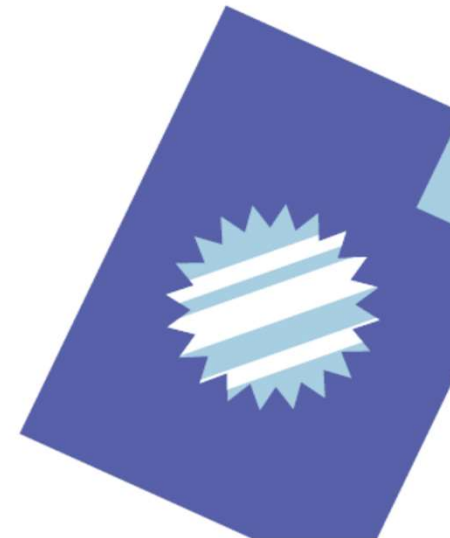
METALLIC/FOIL BLOCK PRINTING

WHY CAN THIS BE A PROBLEM?

As with films and laminates, metallic and foil block can be difficult to separate from the paper content and the particles can clog up machinery.

WHAT ARE THE CONSIDERATIONS?

Generally, paper mills can recycle packaging that has metallic block printing on one side and no more of 60% of that sides surface area. Don't exceed this recommended maximum limit.



Hot and Cold Foil Transfer

Hot and Cold Foil Transfer can be dealt with by paper mills.

Cartons printed with not more than 60% of the external surface area in foil transfer should be considered recyclable.





Recycling/Deinking Process: Study by INGEDE



International
Association of the
Deinking Industry

Deinking test to judge the removal of foil from printed products

A major step in the recycling process of printed graphic products to produce a bright pulp suitable for a wide range of recycled paper and board.

Tested to INGEDE Method 11 Jan 2018

The deinkability of a printed product as a whole can only be assessed by looking at its Deinkability Score, which can range from -100 to +100

SUSTAINABLE EMBELLISHMENT



Recycling/Composting

Certification gained from by DIN CERTO: DIN EN 13432.

With this hot stamped recyclable papers and cardboard that have been decorated with our surface finish can easily be composted and returned to the natural cycle.

Max 1% of overall mass proportion



Grammage / g/m ²	100	125	150	175	200	215	230	245	265	290	305	325	350	375	400	425	450	500	600
0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
5	0,12%	0,10%	0,08%	0,07%	0,06%	0,06%	0,05%	0,05%	0,04%	0,04%	0,04%	0,04%	0,03%	0,03%	0,03%	0,03%	0,03%	0,02%	0,02%
10	0,24%	0,19%	0,16%	0,14%	0,12%	0,11%	0,10%	0,10%	0,09%	0,08%	0,08%	0,07%	0,07%	0,06%	0,06%	0,06%	0,05%	0,05%	0,04%
15	0,36%	0,29%	0,24%	0,21%	0,18%	0,17%	0,16%	0,15%	0,14%	0,12%	0,12%	0,11%	0,10%	0,10%	0,09%	0,08%	0,08%	0,07%	0,06%
20	0,48%	0,38%	0,32%	0,27%	0,24%	0,22%	0,21%	0,20%	0,18%	0,17%	0,16%	0,15%	0,14%	0,13%	0,12%	0,11%	0,11%	0,10%	0,08%
25	0,60%	0,48%	0,40%	0,34%	0,30%	0,28%	0,26%	0,24%	0,23%	0,21%	0,20%	0,18%	0,17%	0,16%	0,15%	0,14%	0,13%	0,12%	0,10%
30	0,71%	0,57%	0,48%	0,41%	0,36%	0,33%	0,31%	0,29%	0,27%	0,25%	0,24%	0,22%	0,21%	0,19%	0,18%	0,17%	0,16%	0,14%	0,12%
35	0,83%	0,67%	0,56%	0,48%	0,42%	0,39%	0,36%	0,34%	0,32%	0,29%	0,27%	0,26%	0,24%	0,22%	0,21%	0,20%	0,19%	0,17%	0,14%
40	0,95%	0,76%	0,64%	0,55%	0,48%	0,44%	0,42%	0,39%	0,36%	0,33%	0,31%	0,29%	0,27%	0,26%	0,24%	0,23%	0,21%	0,19%	0,16%
45	1,07%	0,86%	0,71%	0,61%	0,54%	0,50%	0,47%	0,44%	0,41%	0,37%	0,35%	0,33%	0,31%	0,29%	0,27%	0,25%	0,24%	0,22%	0,18%
50	1,19%	0,96%	0,79%	0,68%	0,60%	0,56%	0,52%	0,49%	0,45%	0,41%	0,39%	0,37%	0,34%	0,32%	0,30%	0,28%	0,27%	0,24%	0,20%
55	1,30%	1,04%	0,87%	0,75%	0,66%	0,61%	0,57%	0,54%	0,50%	0,45%	0,43%	0,40%	0,38%	0,35%	0,33%	0,31%	0,29%	0,26%	0,22%
60	1,42%	1,14%	0,95%	0,82%	0,71%	0,67%	0,62%	0,58%	0,54%	0,49%	0,47%	0,44%	0,41%	0,38%	0,36%	0,34%	0,32%	0,29%	0,24%
65	1,54%	1,23%	1,03%	0,89%	0,77%	0,72%	0,67%	0,63%	0,59%	0,54%	0,51%	0,48%	0,44%	0,41%	0,39%	0,37%	0,35%	0,31%	0,26%
70	1,65%	1,33%	1,11%	0,95%	0,83%	0,78%	0,73%	0,68%	0,63%	0,58%	0,55%	0,51%	0,48%	0,45%	0,42%	0,39%	0,37%	0,33%	0,28%
75	1,77%	1,42%	1,19%	1,02%	0,89%	0,83%	0,78%	0,73%	0,67%	0,62%	0,59%	0,55%	0,51%	0,48%	0,45%	0,42%	0,40%	0,36%	0,30%
80	1,88%	1,51%	1,26%	1,09%	0,95%	0,89%	0,83%	0,78%	0,72%	0,66%	0,63%	0,59%	0,55%	0,51%	0,48%	0,45%	0,42%	0,38%	0,32%
85	2,00%	1,61%	1,34%	1,15%	1,01%	0,94%	0,88%	0,83%	0,76%	0,70%	0,66%	0,62%	0,58%	0,54%	0,51%	0,48%	0,45%	0,41%	0,34%
90	2,11%	1,70%	1,42%	1,22%	1,07%	0,99%	0,93%	0,87%	0,81%	0,74%	0,70%	0,66%	0,61%	0,57%	0,54%	0,51%	0,48%	0,43%	0,36%
95	2,23%	1,79%	1,50%	1,29%	1,13%	1,05%	0,98%	0,92%	0,85%	0,78%	0,74%	0,70%	0,65%	0,60%	0,57%	0,53%	0,50%	0,45%	0,38%
100	2,34%	1,88%	1,57%	1,35%	1,19%	1,10%	1,03%	0,97%	0,90%	0,82%	0,78%	0,73%	0,68%	0,64%	0,60%	0,56%	0,53%	0,48%	0,40%

Basis of calculation: Luxor® MTS 220; weight applied 2.4 g / m²



CERTIFICATE

Certificate holder Leonhard Kurz Stiftung & Co. KG
Schwabacher Str. 482
90763 Fürth
GERMANY

Product Additives according to DIN EN 13432

Type, Model ALUFIN® MTS, LUXOR® MTS 220, LUXOR® MTS 420N, LUXOR® MTS 232
LUXOR® MTS 385, LUXOR® MTS 338, LUXOR® MTS 376, LUXOR® MTS 334
LUXOR® MTS 420, LUXOR® MTS 349, LUXOR® MTS 307

Testing basis DIN EN 13432:2000-12
Certification Scheme Additives harmless to the composting process (2018-03)

Material Maximal usable amount in product: depends on used printing ink.

Mark of conformity 

Registration No. 820039

Valid until 2024-09-30

Right of use This certificate entitles the holder to use the mark of conformity shown above in conjunction with the specified registration number.
See annex for further information.

2021-01-28
Dipl.-Phys. Carlo Seiser
Head of Certificate Body




DIN CERTCO Essenbachl 10 Kienleimühlweg 96 91031 Altheimstr. 56 D-12103 Berlin www.din-certco.de

Sorting: Study by SUEZ

A SUEZ.circpack® report for 



Leonhard Kurz Stiftung & Co. KG

Tube with Inline foiling

Sorting test

Date: 23.12.2020
Prepared by: Sebastian Blidmon
Packaging Engineer
SUEZ.circpack®
Email: droppack@suez.com

COLLECTION - SORTING - RECYCLING - LEGISLATION -
Expertise & certification on circular packaging



1. Standard tube (reference)	2. Tube with Inline foiling Technology (front & back) – coverage 70%
	

FINAL RESULT:

- 88% of standard tube (reference)
87% of tube with Inline foiling technology covering 70%
... are sorted into the **rigid PE stream.**

Recyclability of PP bottle with KURZ transfer product



EXAMINATION PROTOCOL

Recyclability of Packaging

Leonhard Kurz Stiftung & Co. KG
Schwabacher Straße 482
D-90763 Fürth

The company receives the examination protocol of recyclability for the following packaging.

Designation

PP-bottle with silver coating (without closure)

Test result

Allocation to path/specification:	Polypropylene, Fraction No. 324 (DE) Mixed Polyolefins, Fraction No. 323 (DE) Mixed Plastics, Fraction No. 350, 352 (DE)
Assessment via path/specification:	Polypropylene, Fraction No. 324 (DE)
Recyclate (final product):	PP-regranulate

Test standard/ scope of application: Requirements and assessment catalogue of the institute cyclos-HTP for EU-wide certification (state of 02.01.2019) / Scope of validity according to nation states, see Chap. 1

In accordance with the test results and the examination documents the recyclability of the packaging amounts to:

100 %* (DE, NL, AT, NO, UK)

* This examination protocol is no certification of the final packaging. For the final assessment and for the purpose of issuing a certificate the final packaging has to be available. Therefore, the figure mentioned above is conditionally granted.

Aachen, dated 21.12.2018

Dr. Joachim Christian
Publicly appointed and sworn expert for the field of packaging waste recycling
Competent authority: IRL Aachen

Institute cyclos - HTP
Institute cyclos-HTP GmbH
Maria-Theresa-Allee 35 - 52064 Aachen
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fax: +49 (0) 241 / 949 00-9

Examination documents (No. 2058-2018-000299) with 7 following pages



Is the **end product** recyclable?

Products with hot stamping & cold transfer are

- SORTING
- RECYCLABLE
- DEINKABLE
- COMPOSTABLE



02. Closing the loop

TRANSFER CARRIER

From waste material to **valuable raw material.**

- ✓ Extremely thin PET carrier material
- ✓ Free of hazardous substances

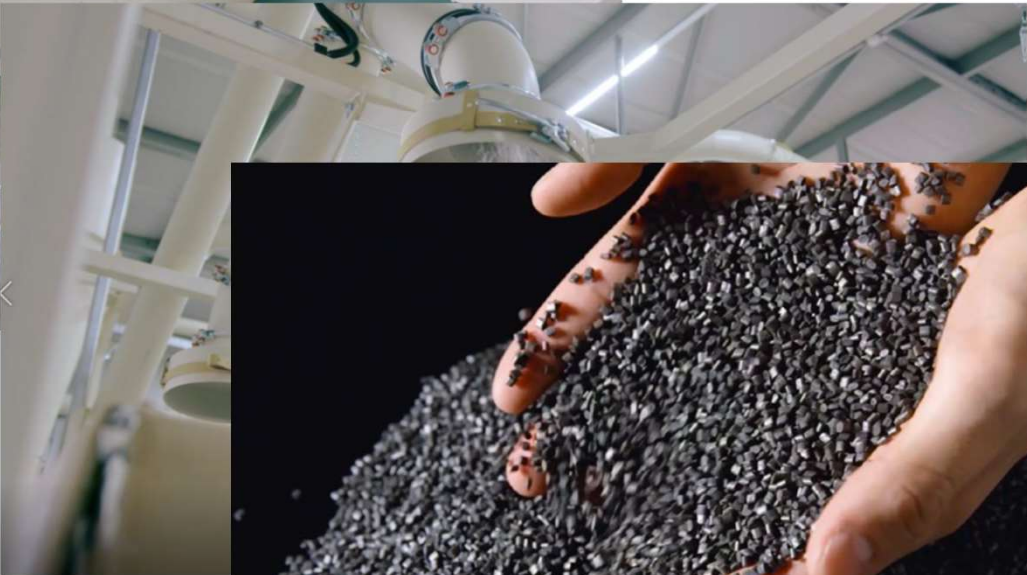


← YESTERDAY

- PET remains in the industrial waste cycle
- PET as high quality substitute fuel for natural gas or oil
- Landfill as an exception

TODAY →

Development of a complete process for recycling KURZ transfer carrier waste





**Sustainability is a Journey Not
a destination!**

DIG DEEPER WITH US... QUESTIONS? CLARIFICATIONS?

For more information:

<https://www.kurz-graphics.com/sustainability/>



Christophe Dujardin
Business Development Manager
Sustainability/ Cold Transfer

I'd love to help!
Christophe.Dujardin@kurz.de