

A close-up photograph of a person's hand, wearing a dark suit jacket and a white shirt cuff, holding a bright red card. The card is tilted and features white text. The background is solid black.

**Card Substrates
for hybrid ID Cards
with high security
and durability**



Cards are used in a variety of application environments



A variety of application environments

Cards are used in a variety of application environments

ACCESS : Visual inspection and contact

BANKING : Contact and thermal stress

TRANSPORT : Contact and thermal stress

SECURITY : Visual inspection and contact



A variety of application environments

Handling activities induce stress:

Scratching / bending

Moisture / fluids / liquids

Temperature

Additional challenge by

frequency of use

time

A variety of application environments

For each project different solutions can be considered.

The main selection criteria are:

Functional requirements

Targeted Cost level

Required Security level

A wide variety of materials can be considered:

Paper and Laminates

PVC

PETg

PC

...

Traditional solution for ID Cards : ➔ POLYCARBONATE

Delivers single material cards

Strict production parameters

Polymer chemistry invented in the 1950's

Upper cost range

Production based on BPA (health issue)

Generic properties across vendor portfolios

The NEW solution

Highly innovative...

...with great benefits:



EXTRA PROTECTION SHIELD thanks to durable materials

PERFECTLY COMPATIBLE with existing core and features

STRONG and yet **FLEXIBLE** cards

VERY COST COMPETITIVE materials

ENERGY EFFICIENT production process

➔ **Creation of a HYBRID CARD with PETF**

The NEW solution is PETF-based

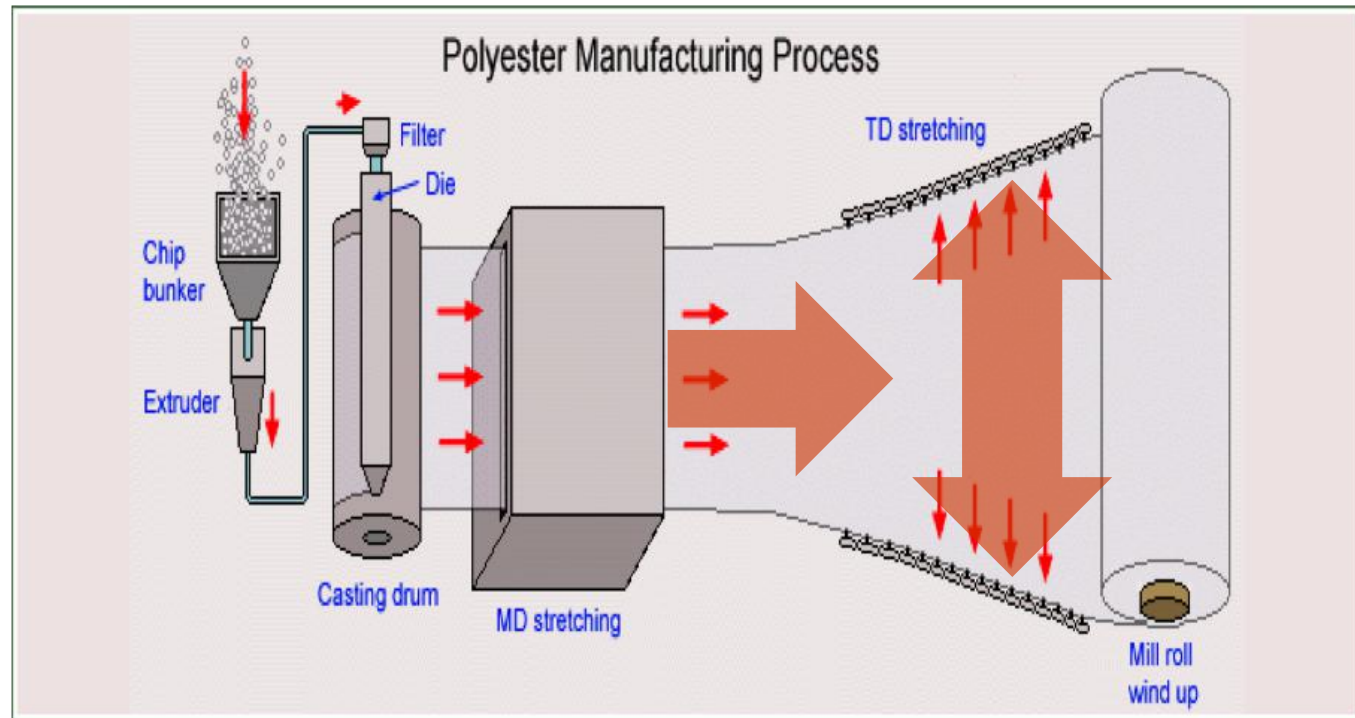
What is PETF?

PETF is a crystalline
Biaxially Oriented
Polyester Film (BOPET).

Primary advantages:

- thermal stability
- mechanical strength
- dimensional stability
- chemically inert

The ideal choice for
industries where superior
performance is required.



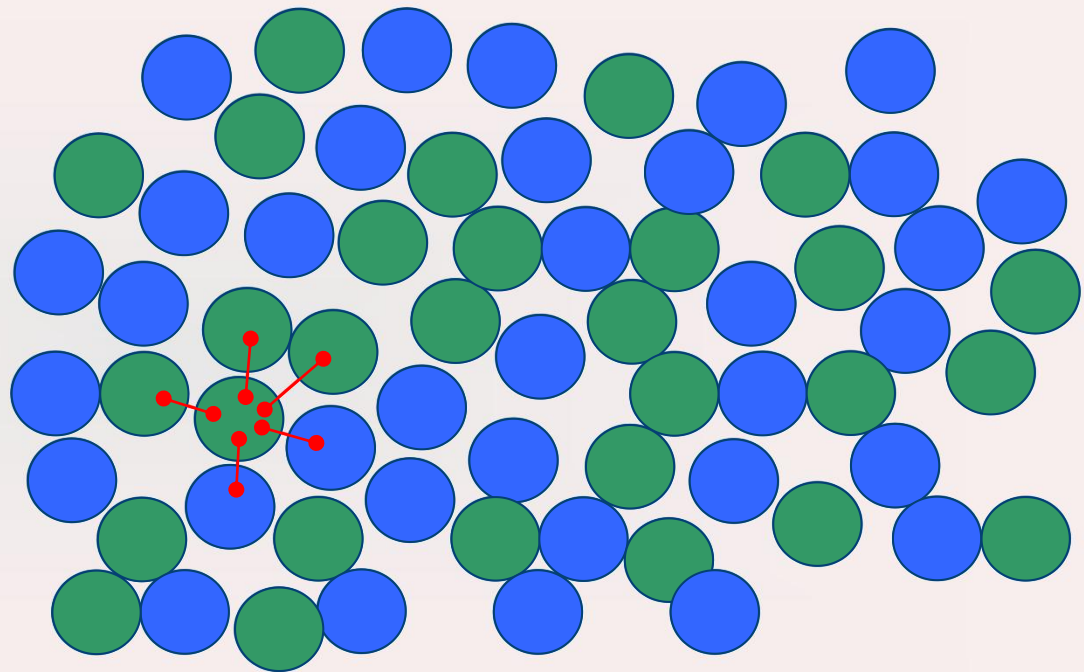
The NEW solution is PETF-based

Why is PETF so durable ?

Structure is all that counts

Amorphous state:
All parts are randomly (dis)ordered.

Internal variety of interactions.



The NEW solution is PETF-based

Why is PETF so durable ?

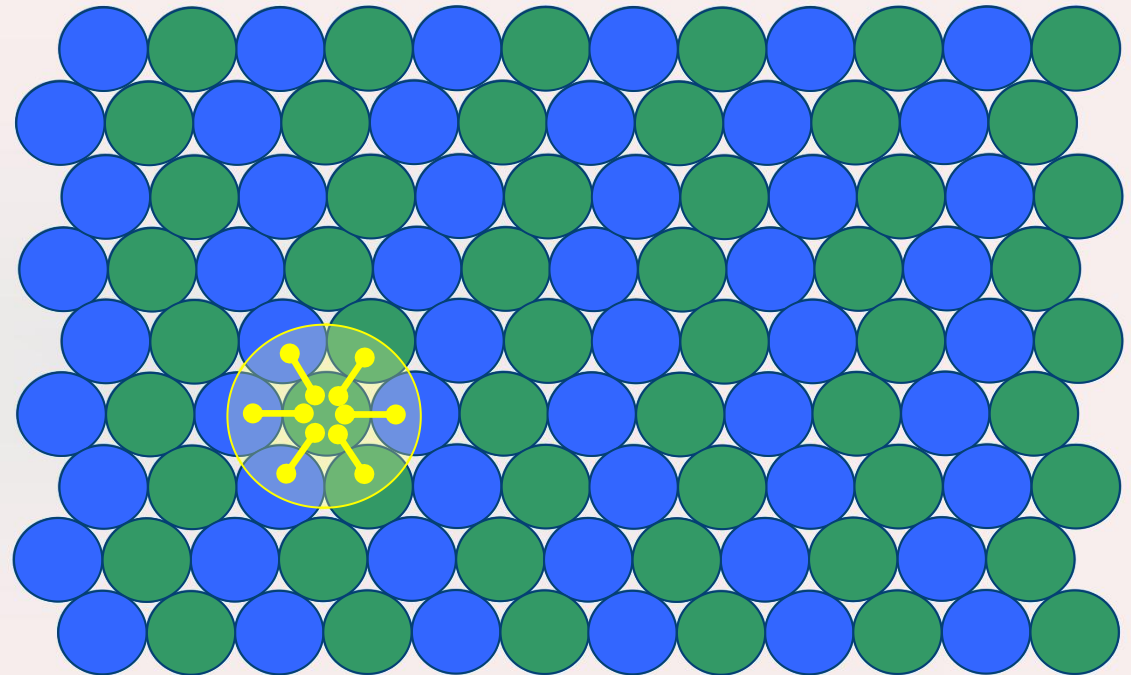
Structure is all that counts

Amorphous state:
All parts are randomly (dis)ordered.

Internal variety of interactions.

Biaxially stretching results
in a crystalline structured unit.

Internally a single type of
interactions is present.



Your benefits with PETF



RIGID PETF SHIELD

+

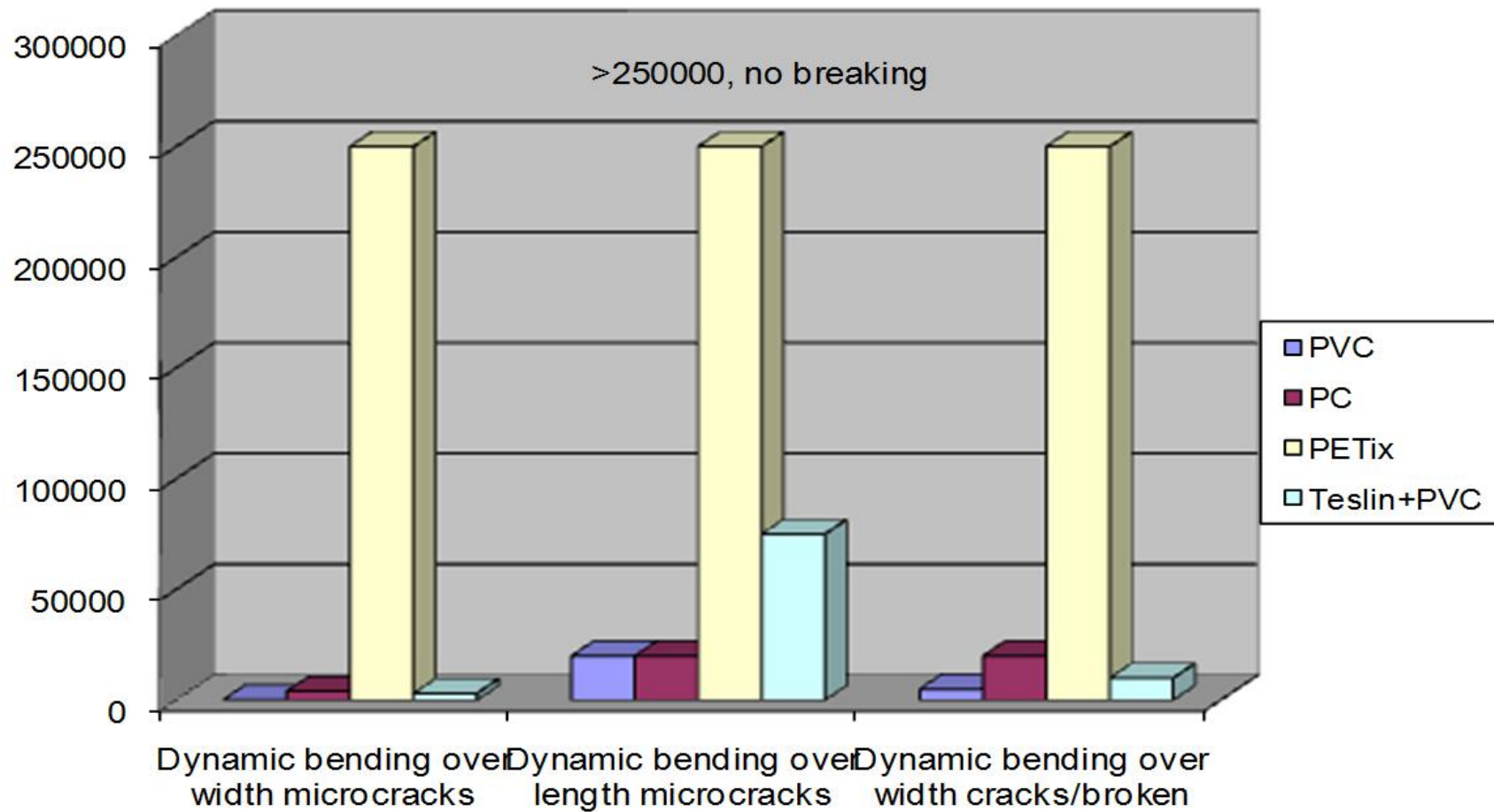


FLEXIBLE CORE

Hybrid Construction = Best of both worlds

Your benefits with PETF – Durability testing

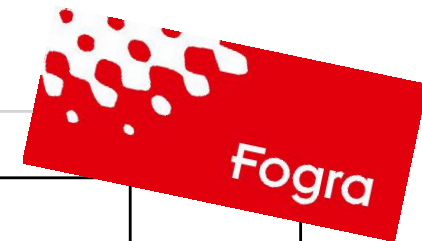
PETF: Superior performance in comparative Bending test



Your benefits with PETF – Durability certification

PETF: FOGRA Certified for Bending and Torsion test

Summary of test results:						
Code	Description of test	Standard of test method	No. Of samples tested	Complies with requirements of test standard	yes	no
DBB I06 (100,000)	Dynamic Bending Stress	ISO/IEC 10373-1 (2006)	10	ISO/IEC 7816-1 (1998) 100.000 bendings	x	
DTB I06 (100,000)	Dynamic Torsional Stress	ISO/IEC 10373-1 (2006)	10	ISO/IEC 7816-1 (1998) 100.000 torsions	x	



FIME[®]



Your benefits with PETF – Mechanical Strength

PETF: Superior Resistance to bending at micro perforation



Manual
bending

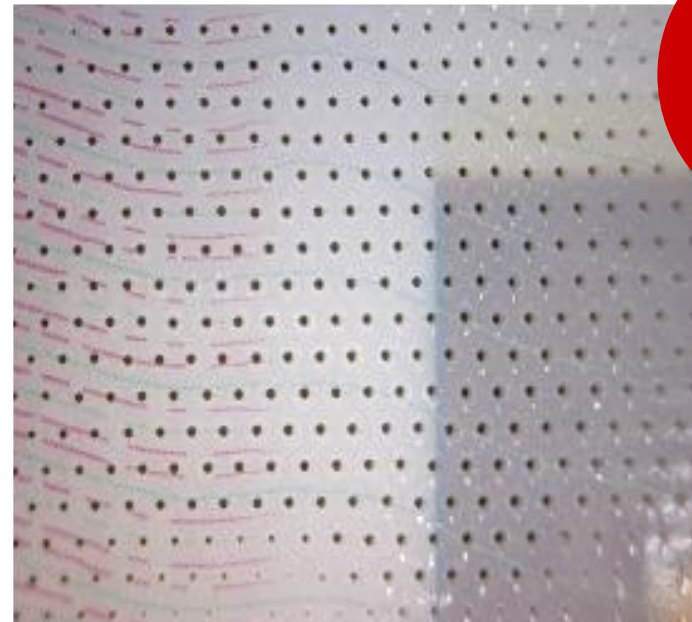
Automated
bending



Full PC card



Hybrid PETF card

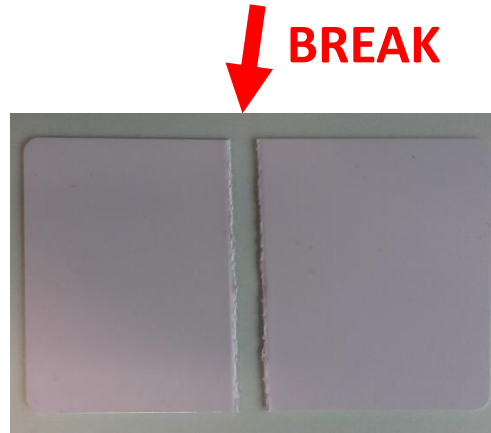


Your benefits with PETF – Extremely resistant

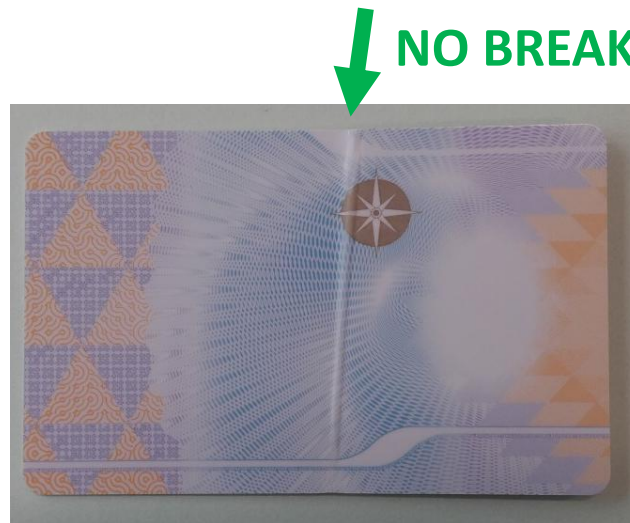
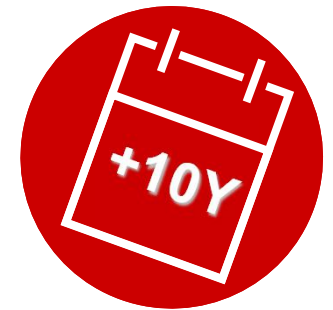
PETF: Superior performance in Full Flip-Over test (FF-O)



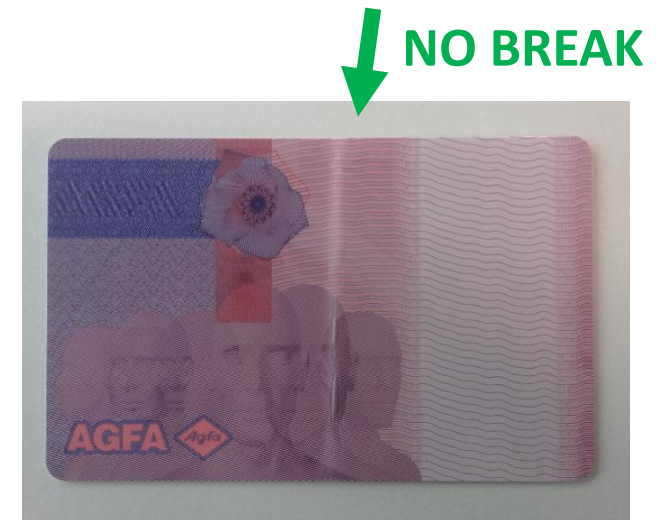
Full PC card 18 x FF-0



Full PVC card 25 x FF-0



PETF/PVC Hybrid card 30 x FF-0



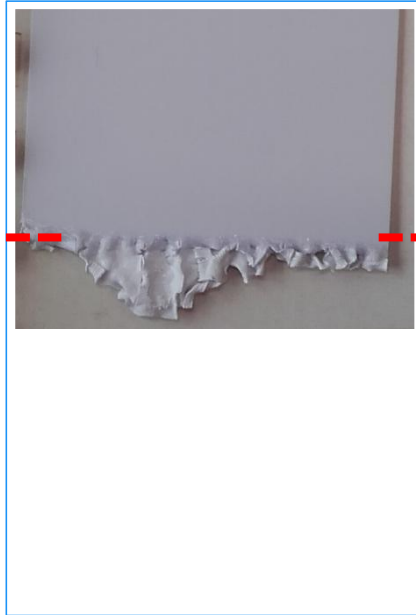
PETF/PETg Hybrid card 30 x FF-0

Your benefits with PETF - Chemical Resistance

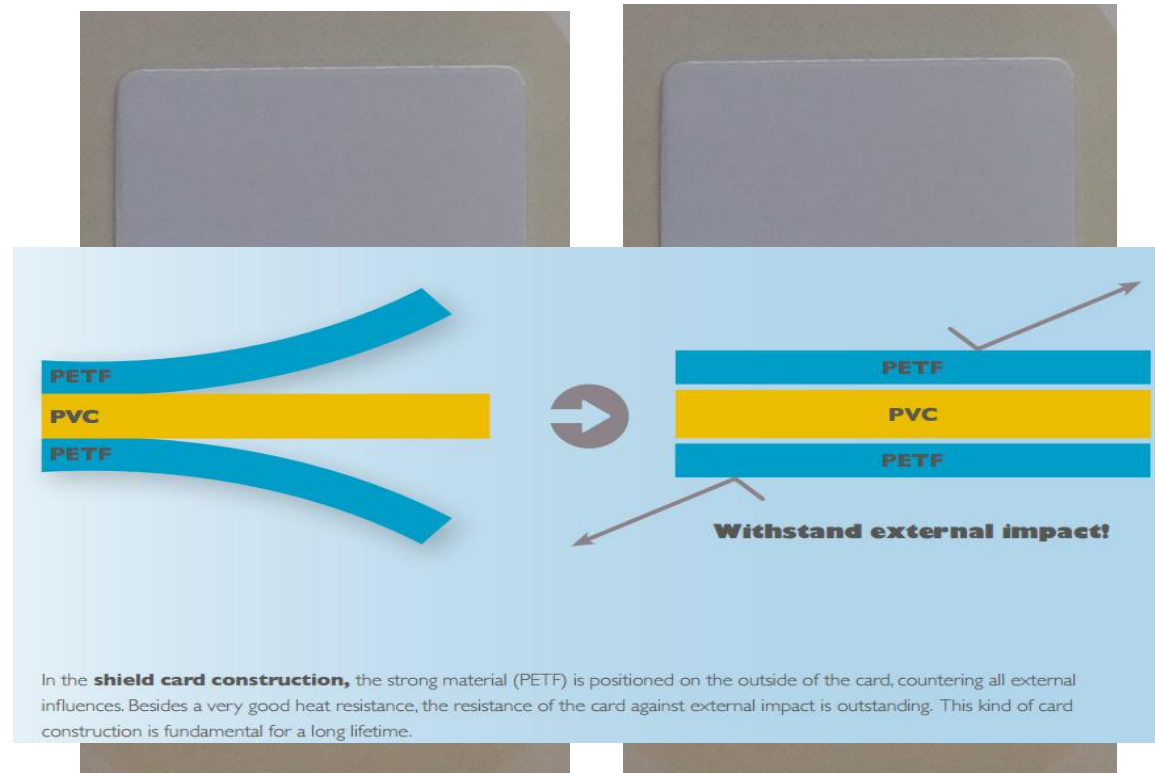
PETF: Superior performance in Chemical Resistance (30 min. MEK)



Full PC card

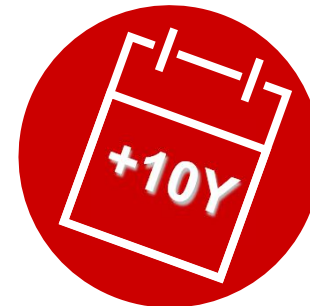


Full PVC card



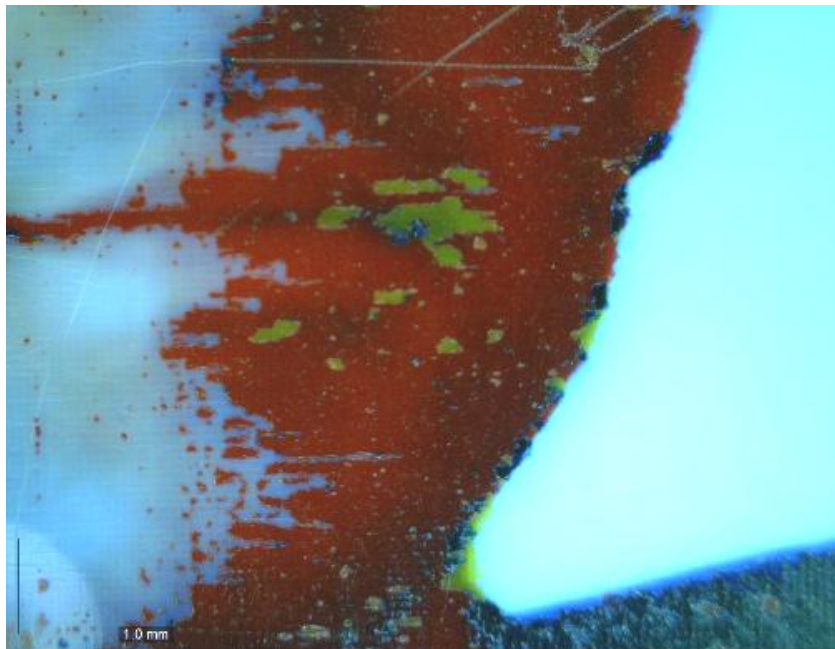
PETF/PVC Hybrid card

PETF / PETg Hybrid card



Your benefits with PETF - D2T2 Printing

PETF: Superior compatibility with D2T2 Printing



Full PC card

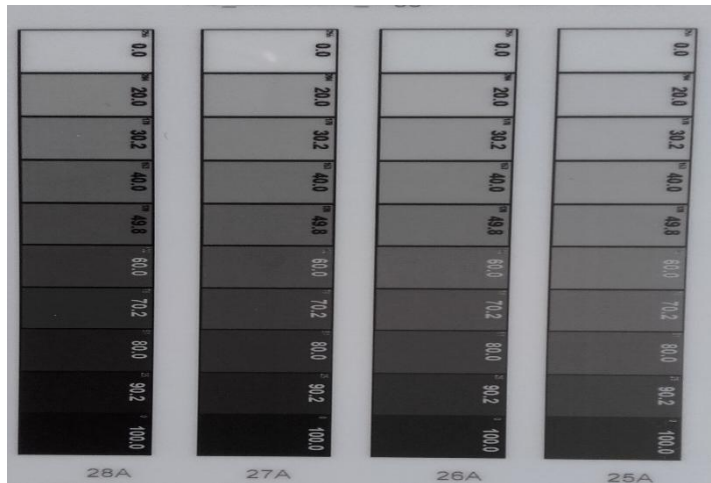


PETF Hybrid card

PETF for Higher Security level – Laser Marking

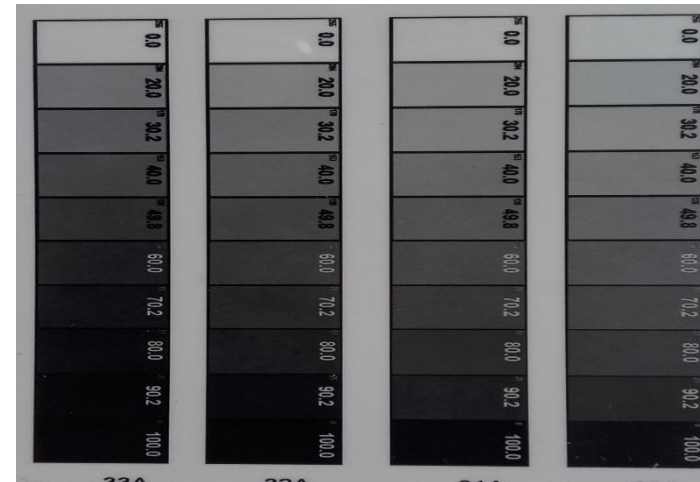
PETF Laser Engraving = uniquely different technology

TRADITIONAL PC LASER FILM



Colour by lasering
results from
burning the substrate
(Carbonization process)

INNOVATIVE PETF LASER FILM

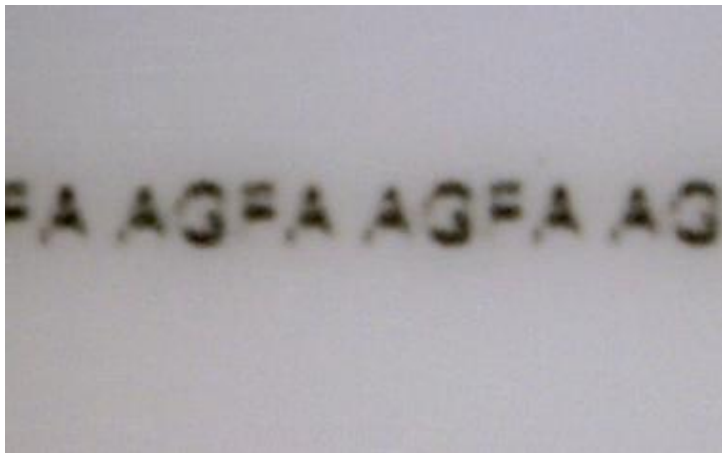


Colour by lasering
results from
controllable colouring technology
(No Carbonization)

PETF for Higher Security level – Laser Marking Microtext

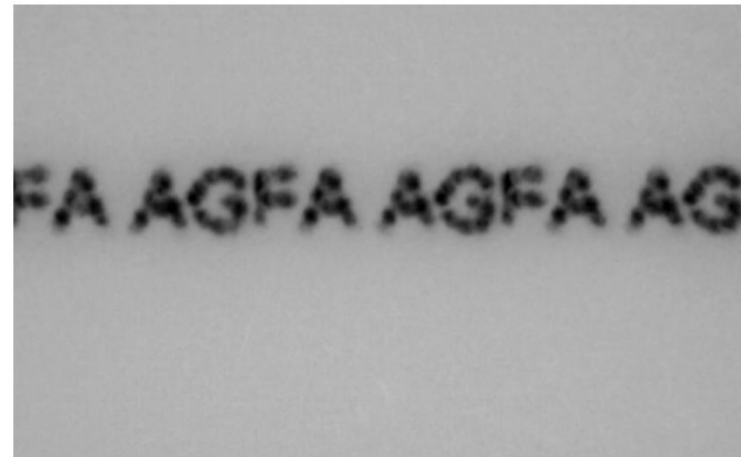
PETF Laser Engraving = uniquely different technology

TRADITIONAL PC LASER FILM



Resolution of data engraving
determined by
burning process

INNOVATIVE PETF LASER FILM



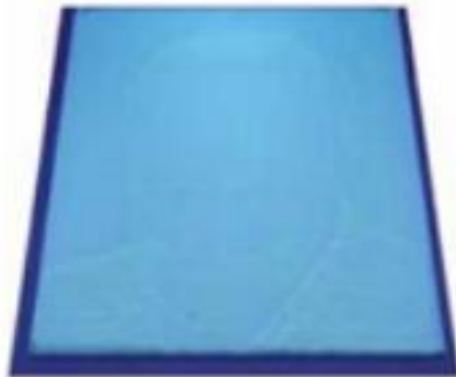
Resolution of data engraving
determined by
controllable writing technology

PETF for Higher Security level – Laser Marking Microtext

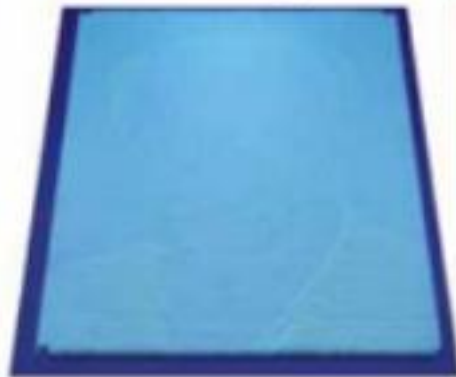
PETF Laser Engraving = Technology makes fraud visible

TRADITIONAL PC LASER FILM

PC card original



PC card original +
addes image



Full PC card

INNOVATIVE PETF LASER FILM

PETix™ PETF OLED
card original



PETix™ PETF OLED
card original + added image

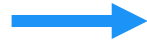


PETF Hybrid card

PETF for Higher Security level – Re-Write Protection

PETF Laser Engraving = unique protection against laser re-writing

TRADITIONAL PC LASER FILM



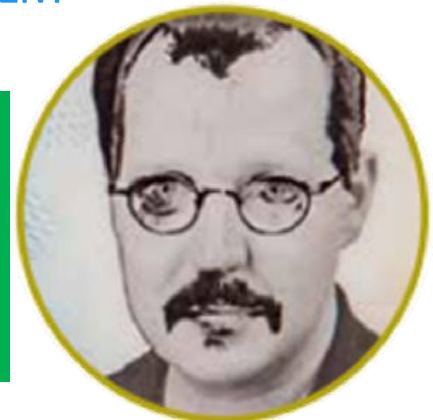
**NO
VISUAL
IMPACT**



INNOVATIVE PETF LASER FILM



**COUNTER-
FEIT IS
WELL
VISIBLE**



PETF for Higher Security level – Re-Write Protection



Blistering and Rewriting only in
Black and not in Magenta colour

THE ONLY SECURE SOLUTION
FOR COLOUR IMAGING

Your benefits with PETF – Compatible with Security Features

PETF delivers great printing quality and is perfectly compatible with

- Market proven Security features
- Personalization technologies
- Standard card manufacturing equipment
- Colour laser personalization
- Chip embedding
- a.o.

Holographic patching

Thermal transfer

Laser engraved ghost image

Guilloches

Rainbow pattern

OVI

MRZ with OCRB

Milled contactchip

Laminated Inlay

Your benefits with PETF – Resistant to skin-oil

PETF : ID Cards are manipulated by human beings...



PETF hybrid cards can resist to frequent manipulation by hand because PETF is resistant to the impact of skin oil.

Your benefits with PETF – Resistant to skin-oil

PETF : ID Cards are manipulated by human beings...



Manipulating PETF hybrid cards does not impact your health because PETF synthesis is based on NON-hazardous chemistry cards.

No use of the endocrine disruptor Bis-Phenol-A (BPA° as in the production of PC).

Besides the choice of the best fit substrate

Cards need to be

→ made

→ transported

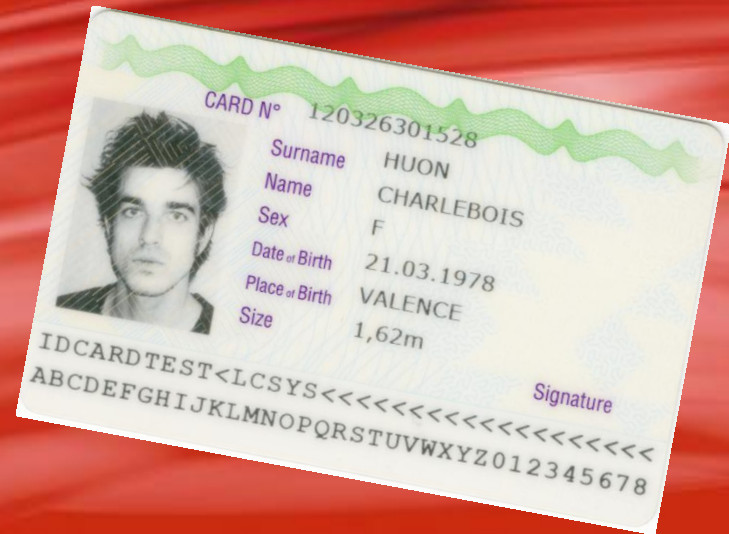
→ personalized

→ issued

Today's Best Practice : **HOW ?**



Beyond PETF - Agfa's Next Generation Solution

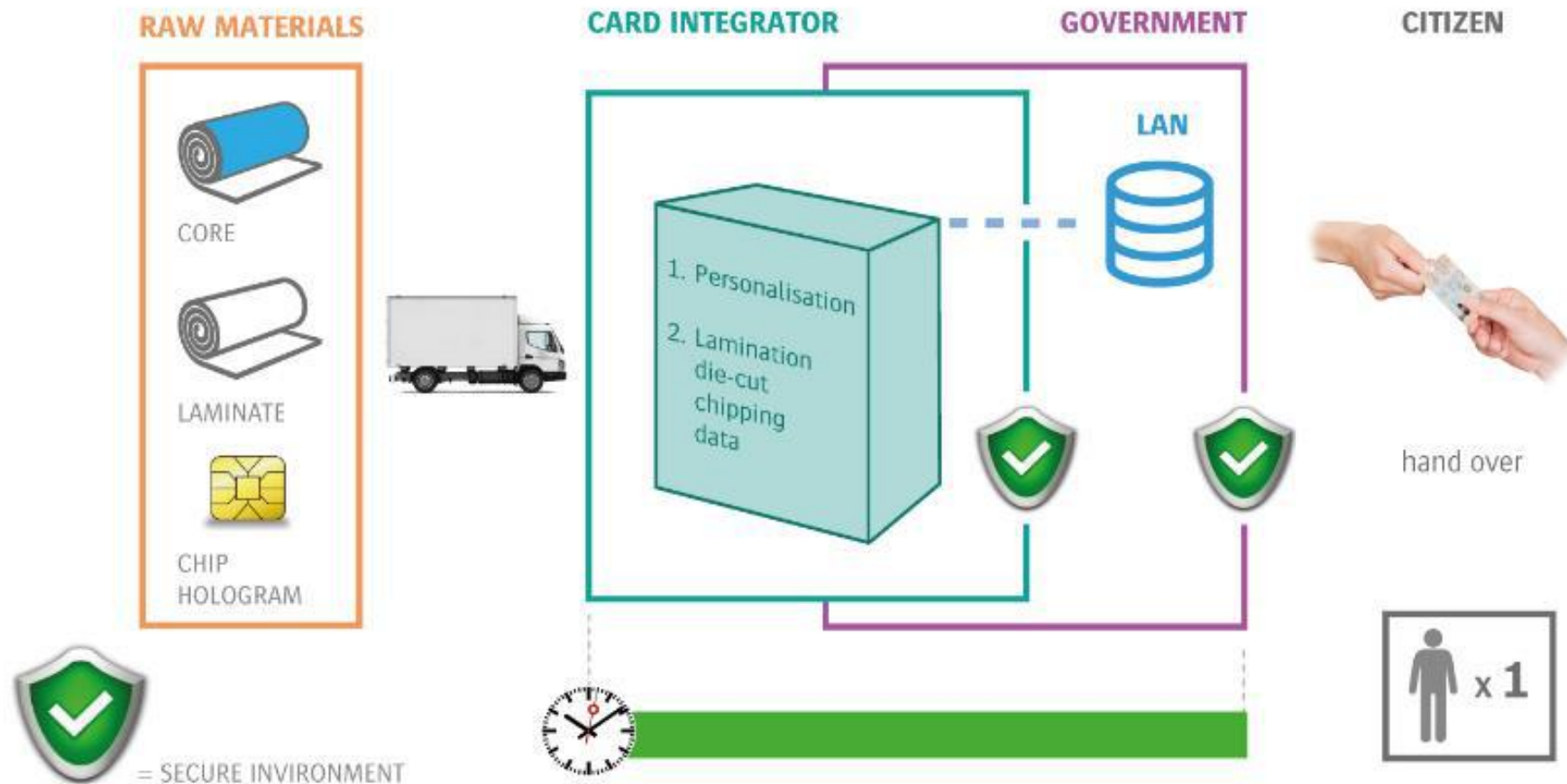


ABSOLUT-ID

Creating ID's in an **absolute manageable way,**
applying an **absolute cost controllable fashion,**
delivering **absolute secure cards.**

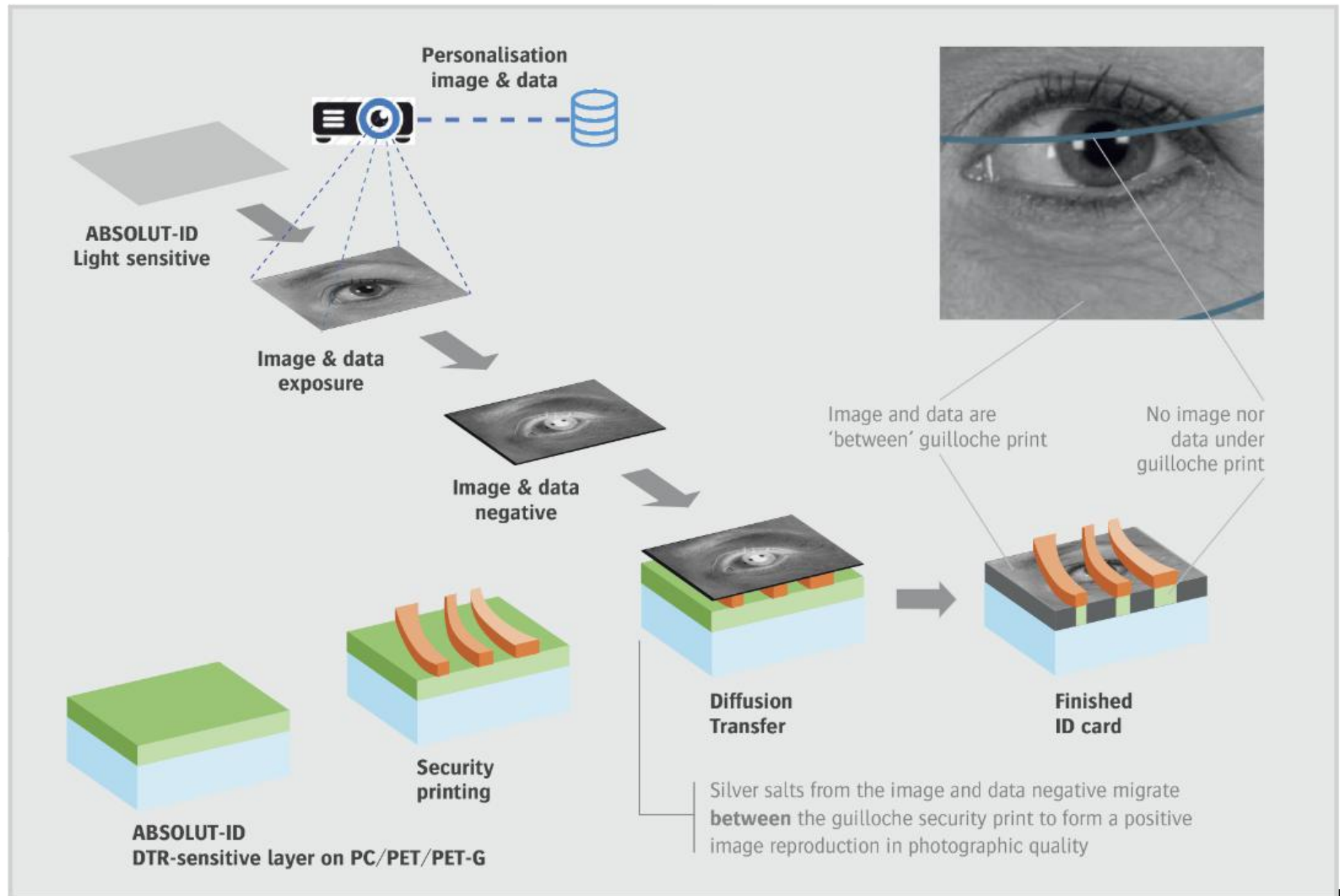
ABSOLUT-ID - Production and Issuance of Cards

Integrated Card production



Time & cost savings!

ABSOLUT-ID · DTR for tamper proof personalization



ABSOLUT-ID – Six integrated Benefits

1. Cash Flow friendly process

Value creation just before card issuance → no immobilised cash waiting for personalisation

2. Affordable Cards

integrated web-based card production process

3. Reliable ID Authentication

Counterfeit virtually impossible + detected by simple visual control

4. Secured Production Flow

One single production environment = low security cost

5. Unparalleled Quality

Continuous tone image → high reliability level of visual identity checks

6. Free choice of card materials

Compatible with all card materials with proven durability



Thank you for your attention. Any questions?



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