

How to Design for Recycling
Without Compromising Performance?

HCA HOLLAND COLOURS

MARK KALISVAART, SUSTAINABLE PACKAGING SUMMIT 2026



ABOUT HOLLAND COLOURS

SINCE 1979

47 YEARS
of customized color and additive formulation experience

GLOBAL SUPPLIER
of plastic colorants and additives

2 BILLION KG
of plastic products colored by Holland Colours each year

NETWORK OF 100
suppliers, distributors and agents

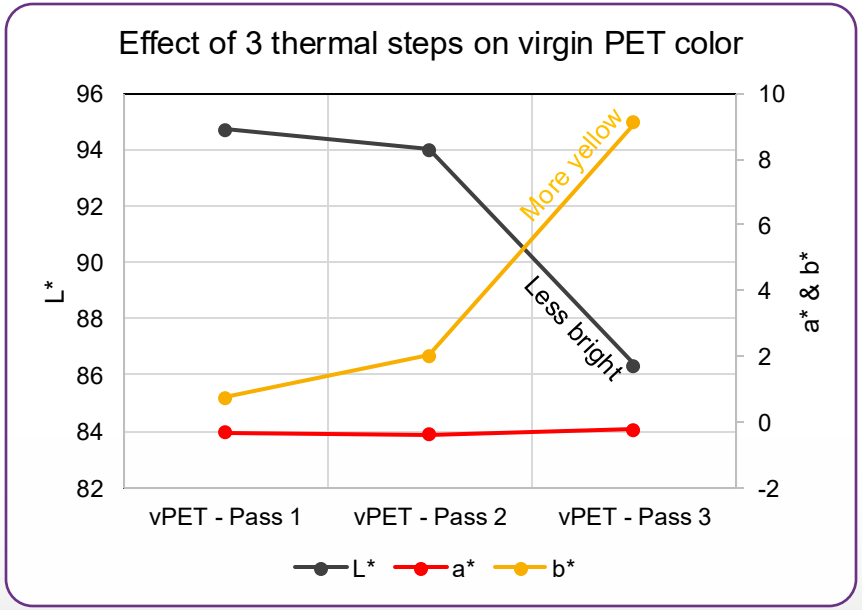
One global team of over **400 EMPLOYEES**

OUR PROFILE

As a company, we set out to deliver customer peace of mind through superior product performance, world-leading product stewardship and outstanding technical service. Our experts co-design color and functional solutions with our customers to support recycling and actively contribute to a more sustainable industry.

EFFECTS OF PET DEGRADATION

Colour degradation undermines shelf appeal





Multiple consecutive passes of virgin PET over extruder

DETERIORATION OF RPET QUALITY

More loops, poorer rPET colour

Dynamics

1. Legislation and brand pledges
2. Improved collection rates and higher rPET content
3. Multiple loops
4. Regional regulatory differences

Impact

1. Increased rPET use
2. More available rPET feedstock, going through more & more loops
3. rPET more yellow and darker
4. Regional rPET quality differences

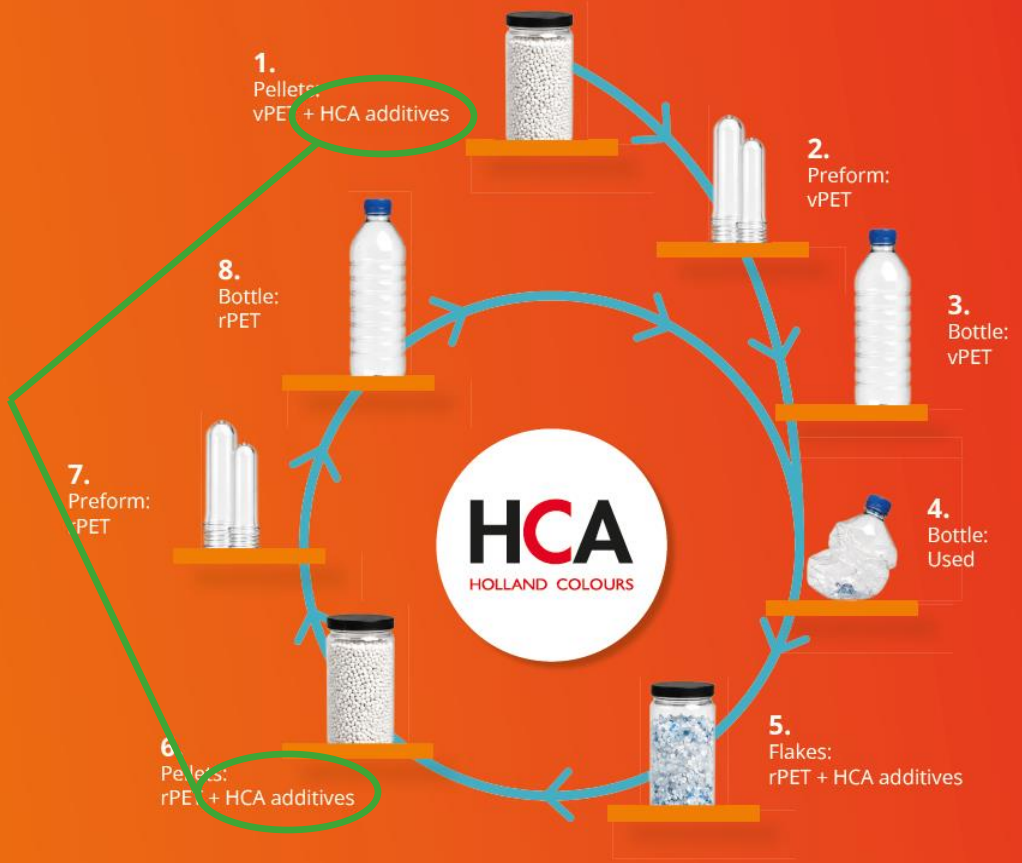
SUPPORTING CIRCULARITY



There are ways to minimize quality loss

Co-designing a circular future

Ensure additives meet DfR and brand requirements with Recycling Friendliness Endorsements



Functionality prevents food waste

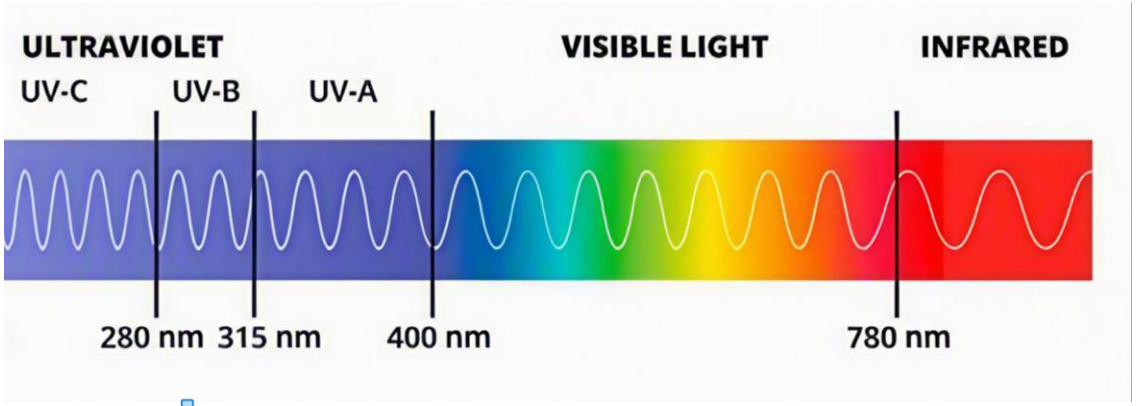


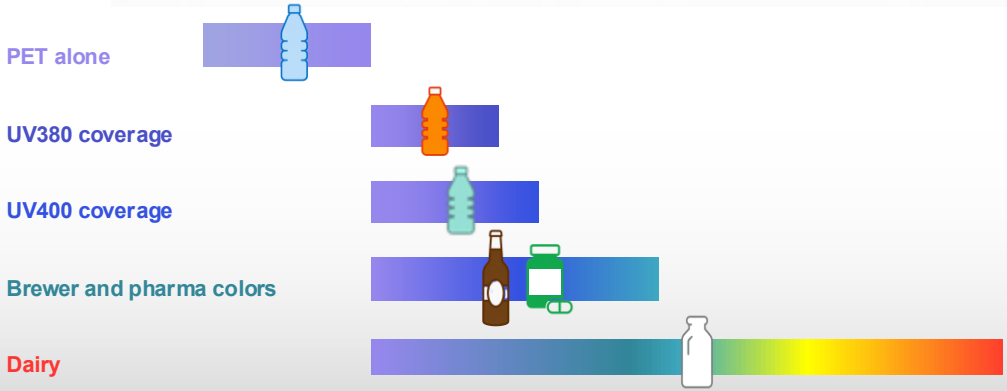
UV-Light Blocker Use Case

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COVERAGE LEVELS OF THE SPECTRUM

PET's natural protection ends at 315nm





BRAND & CONVERTER REQUIREMENTS

UV protection that preserves clear PET recycling

Requirements

- Enhanced UV-Light protection of colour, flavors, vitamins and fragrances
- Optimal economics
- Recycling friendly for clear PET bottles
- Food contact safe

Desired Outcomes

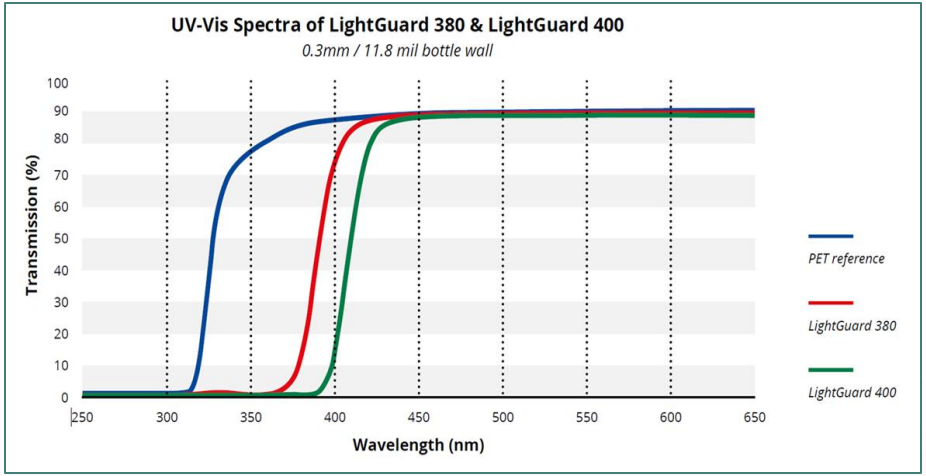
- Protection up to 400nm
- Highly concentrated
- RecyClass & EPBP recognized
- EFSA & FDA compliant

LIGHTGUARD 400

Novel recycling friendly solution

Benefits

- Designed for clear PET recycling stream, stable up to 300°C
- UV protection up to 400 nm
- Food contact safe
- Recycling friendliness endorsements for bottles & sheets



Co-designing a circular future

Optimize rPET quality



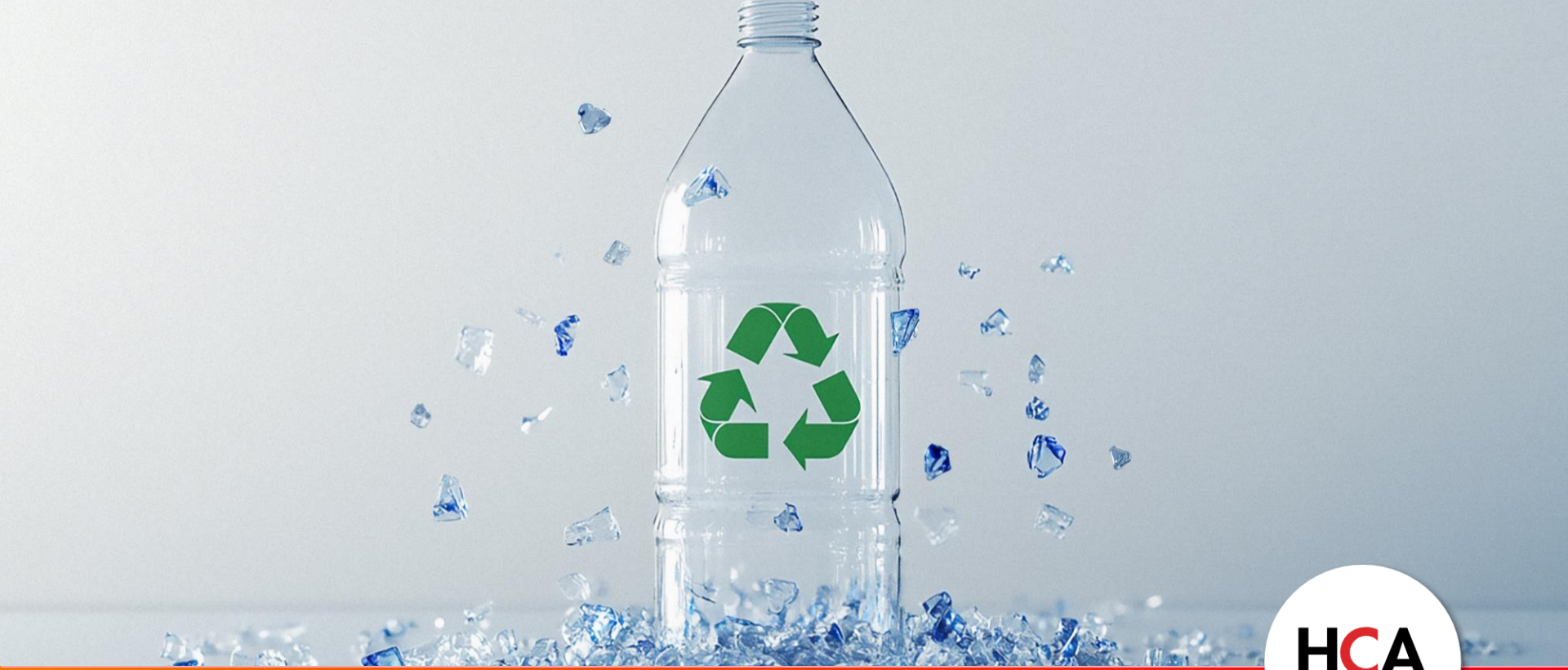
Degradation mainly at reprocessing

TONERS

Masking of yellowing by adding colour







PET Recycling Use Case

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BRAND & RECYCLER REQUIREMENTS

Less colour loss, more rPET value

Requirements

- rPET value retention
- Compatible with recycling equipment
- Recycling friendly for clear rPET bottles
- Food contact safe

Desired Outcomes

- Minimize (colour) quality decline
- Injection of liquid during extrusion step
- RecyClass & APR endorsed
- Migration below SML's, EFSA & FDA compliant

CIRCSTAB®: PREVENTION OF PET DEGRADATION

Preserving PET quality, loop after loop

The Pre-emptive Approach

- Antioxidant stabilizer
- Food contact safe
- Stabilization vs Cosmetic fix
  - **L*** - Preserves brightness
  - **b*** - Minimizes yellowing
  - **IV** – Viscosity retention

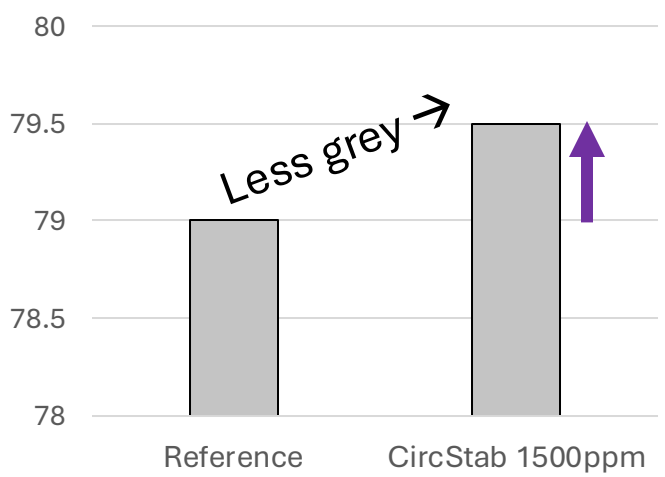
FDA efsa European Food Safety Authority RecyClass APR RECOGNIZED APR Design for Recyclability



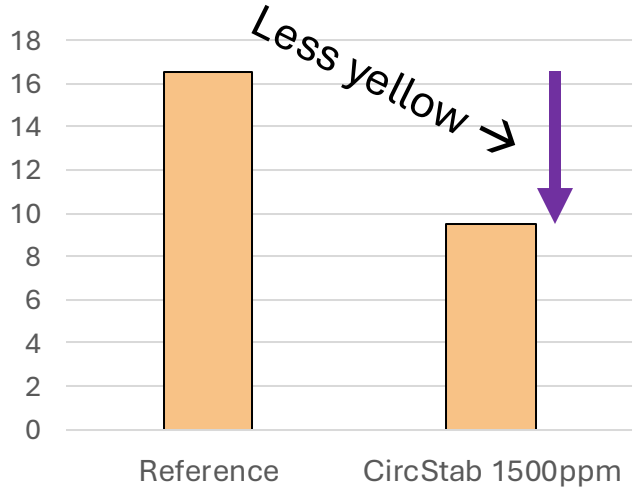
RPET IMPROVEMENTS WITH CIRCSTAB

Less yellowing. Brightness preserved

Post-SSP Plaque L*



Post-SSP Plaque b*



RESULT

Better rPET quality, better shelf appeal



WE GUIDE YOU TO INNOVATIVE SOLUTIONS

On our way to high quality truly circular PET

- rPET quality retention
- Proven recycling friendly
- Food contact safe
- Highly effective
- Technical & Regulatory Support
- HCA as co-designer



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